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# COMMONWEALTH of VIRGINIA

## PLANTS AND ANIMALS RECORDED FROM THE JAMESTOWN ISLAND 400 PROJECT AREA, COLONIAL NATIONAL HISTORICAL PARK

Virginia Department of Conservation and Recreation  
Division of Natural Heritage  
Natural Heritage Technical Report 02-01  
January 2002



Department of Conservation & Recreation

CONSERVING VIRGINIA'S NATURAL AND RECREATIONAL RESOURCES

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JAMESTOWN ISLAND 400 PROJECT AREA,  
COLONIAL NATIONAL HISTORICAL PARK**

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This report may be cited as follows:

Chazal, A. C. and N. E. Van Alstine. 2002. Plants and animals recorded from the Jamestown Island 400 Project Area, Colonial National Historical Park. Natural Heritage Technical Report 02-01. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, Virginia. Unpublished report submitted to Colonial National Historical Park. January 2002. 69 pages.

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## **ACKNOWLEDGEMENTS**

Funding for this report was provided by the United States Department of the Interior, National Park Service, through cooperative agreement number 4000-8-9027 number 2. We wish to thank the staff of Colonial National Historical Park, in particular Charles Rafkind for his contributions and support. Holly Grubbs assisted with the botanical survey for sensitive joint-vetch (*Aeschynomene virginica*) in 2000. DCR-DNH staff John Townsend, Tom Smith, Joe Weber, Phil Coulling, and Dean Walton assisted with botanical surveys in 2000-2001. DCR-DNH staff Sherri White, Kathy Derge, Gina Pisoni, and Joe Weber, and volunteer Lisa Page Carter assisted with zoological field work in 2000-2001. Past DCR-DNH staff whose observations are incorporated here include Kurt Buhlmann, Christopher Pague, Douglas Stannard, Robert Wright, and Allen Belden Jr.

## **INTRODUCTION**

In the spring of 2000, the Colonial National Historical Park, National Park Service, U. S. Department of the Interior (CNHP), contracted with the Virginia Department of Conservation and Recreation's Division of Natural Heritage (DCR-DNH) to synthesize and summarize lists of plants and animals recorded within the Jamestown Island 400 Project Area (JI400PA), CNHP. The practical goal of these lists is to assist CNHP personnel in decisions concerning land use, maintenance activities, public access, site placement for facilities, and management of areas containing natural heritage resources.

DCR-DNH is the state agency responsible by statutory authority under the Virginia Natural Area Preserves Act (Section 10.1-209 through 217, [Code of Virginia](#)) for inventory, database maintenance, protection, and management of Virginia's natural heritage resources. Such resources are defined as the habitat of rare, threatened, or endangered plant and animal species, rare or state significant communities, and other natural features. DCR-DNH provides the only comprehensive effort to identify the Commonwealth's most significant natural areas through ongoing scientific biological survey. Data gathered during this state-wide survey is assembled and managed through a sophisticated Biological and Conservation Data System (BCD) in which information on ecosystems and species, their biology, habitats, locations, conservation status, and management needs is continually updated and refined. DCR-DNH is part of an international network of natural heritage programs, which utilize standardized inventory methodologies and BCD technology.

The JI400PA covers approximately 2,263 acres (914 ha) and includes all of Jamestown Island and its associated marshes, the Neck O Land area, the Isthmus and Glass House Point areas, and the Colonial Parkway to the overlook just west of Mill Creek. The site is mapped on the Surry and Hog Island U.S. Geological Survey 7.5' topographic quadrangles in Figure 1. The Association for the Preservation of Virginia Antiquities (APVA) owns a small portion of the study area on the west end of Jamestown Island. Further information on the area may be found in Chazal and Van Alstine (2001).

## **METHODOLOGY**

### **PLANT LIST**

Sources for the vascular plant list included observations made by DCR-DNH field staff in 2000 – 2001, field notes from previous DCR-DNH surveys, and past literature. DCR-DNH botanists compiled a list of taxa observed as they conducted a survey for rare species in 2000 and 2001. The survey areas included uplands and wetlands in the Neck O Land area, around the Glass House, along the isthmus, and on Jamestown Island. The majority of the field days were spent in the tidal marshes along Back River, the Thorofare and on Jamestown Island and therefore the contributions to the list from this source focused predominately on wetland species. Plants of disturbed areas, roadsides and mowed fields were recorded when the survey routes briefly brought the botanist into such habitats, but no attempt was made to conduct a thorough inventory of these habitats. Taxa were also drawn from data gathered in 2001 by DCR-DNH ecologists J.T. Weber and P.P. Coulling from 19 vegetation plots sampled in both wetland and upland sites for the purposes of developing a vegetation classification for the study area. Notes on plant observations from past survey work conducted by or for DCR-DNH from 1990 -1998 also served as a source of taxa.

The CNHP Natural Resources Bibliography, provided by CNHP, was reviewed for reports that might include species lists for the project area, as were manual report files maintained by the CNHP Natural Resource Manager at Yorktown. The following sources provided useful lists: Bell (1990), Bruce (N.D.), Grubbs (2000), Loetterle (1970), Moore (1980), and North (1984). The greatest number of taxa was derived from Loetterle's 1970 flora of Jamestown Island, which, in addition to the more natural habitats on the island, included roadsides, old fields and waste places. Grubbs recent (2000) report on exotic invasive species in the study area filled in some of the gaps created by the emphasis on natural areas by the DCR-DNH surveys and plot work.

Table 1 lists the vascular flora reported for JI400PA. Taxa are arranged alphabetically by family. The list includes only scientific names, as common names are available in the ITIS (Integrated Taxonomic Information System) database. Nomenclature follows Kartesz (1999) except where noted; therefore the nomenclature for many taxa listed on the original sources has been converted. The sources for each taxon are included in the table.

## ANIMAL LISTS

Lists of animals recorded for the JI400PA are presented for the following taxa: fish (Table 2), amphibians (Table 3), reptiles (Table 4), birds (Table 5), mammals (Table 6), Lepidoptera (butterflies, skippers, and selected families of moths; Table 7), and Odonata (dragonflies and damselflies; Table 8). The lists were compiled from DCR-DNH field observations, the NPSpecies Database, Virginia Department of Game and Inland Fisheries' (VDGIF) Virginia Fish and Wildlife Information Service (VFWIS), reports to CNHP, and personal communications with knowledgeable individuals. These are discussed in further detail below. Each list is ordered alphabetically by family and species, the information source is cited, and additional information is provided as available (for example: area of observation or breeding status).

## Information Sources

*DCR-DNH Observations* – Field observations made by DCR-DNH staff on the JI400PA include surveys conducted in June and July 1990, May 1991, July 1991, and multiple surveys in 2000 and 2001 while conducting an inventory for rare and endangered species on the JI400PA. These later observations are primarily field observations, however some traps and survey techniques were utilized (Figure 2). Surveys were conducted from June to October 2000 and March to September 2001 in both marsh and upland habitats. Methodologies included the following:

Bird song tapes - Recordings of bird songs were played in appropriate habitats to elicit responses from rare or cryptic bird species. Specifically, on 5 July 2001 between 1800 – 2000 h, at fourteen locations, a recording of five rail and bittern species vocalizations was played for several minutes each in an attempt to obtain a responding call (Davis, 1986).

Bird surveys – Additional surveys for avifauna on Jamestown Island included visual survey techniques and listening for bird species in suitable habitats during appropriate seasons.

Dip-nets - Dip-netting was the primary technique used to sample aquatic vertebrate and invertebrate taxa. Dip nets were dragged through emergent vegetation and along the bottom in areas with accumulated detritus.

Hand collection - Reptiles and amphibians, as well as some invertebrates, were captured by hand in terrestrial habitats, where various cover objects were overturned in search of cryptic species.

UV-light traps – Nocturnal insects were captured using standard bucket traps equipped with a 15-watt blacklight (= ultraviolet) powered by a 12-volt gel-cell battery. Ethyl acetate was used as a killing agent. Traps were run overnight in a variety of habitats.

No vertebrates were collected. All invertebrate specimens collected during the study were preserved using standard methods (Martin, 1977). Most of the specimens have been or will be deposited in the Virginia Museum of Natural History; some specimens may be deposited in the National Museum of Natural History and the reference collection (primarily Lepidoptera and Odonata) of DCR-DNH.

*NPSpecies Database* – This is a database developed and utilized by the U.S. National Park Service to aid in inventory and monitoring biological diversity in the national parks. It documents the occurrence of vertebrate and vascular plant species within each national park unit (e.g., Colonial National Historical Park). The database was accessed in March of 2001 for animals (except fish) occurring within CNHP. Attempts to access the database for more precise location information failed due to the inaccessibility of the NPSpecies web site. Species listed on the NPSpecies list are indicated in the tables by bold typeface. Because this NPSpecies list encompasses a large area outside of the JI400PA, some listed species are annotated to indicate the likelihood of their occurrence within the study area based on supporting evidence (other sources) or on the reviewer's experience and expertise.

*Virginia Fish and Wildlife Information Service (VFWIS)*– The Virginia Department of Game and Inland Fisheries (VDGIF) developed and maintains this web site (accessible at <http://vafwis.org/perl/vafwis.pl/vafwis>) which is a searchable database offering listings of vertebrate and some invertebrate animals by geographical distribution. These distributions are based on many data sources, which merit some description (see also the web site for database information and disclaimer). A species list was produced on 4 January 2002 based on the smallest available search radius (2 miles) around Jamestown Island (Figure 3). This includes the JI400PA and also surrounding areas not within the study area and not within CNHP.

Some data sets are incorporated in the VDGIF searchable data set (including Colonial Water birds Database, Coldwater Stream Survey, Natural Springs of Virginia, and Warm water Stream Survey) but are not described here, as they did not appear as sources on the produced species list. The databases involved are as follows (descriptions based on Martin, 2001):

Breeding Bird Atlas (BBA) – These data were collected over a five-year period under a cooperative project between VDGIF and the Virginia Society of Ornithology. The survey evaluated the status and distribution of breeding birds in Virginia. A preliminary summary of the data (from 1984-1988) was reported in *Virginia's Breeding Birds: An Atlas Workbook* (VSO, 1989). The data from this project are reported by VDGIF according to observation 'blocks' within quadrangles (Figure 4 for examples). Some of these observation blocks include the JI400PA plus additional land surrounding the study area. Site-specific information for each observation is not available, creating some uncertainty as to whether or not the observation took place within the JI400PA. There was no indication that the 'block' covering the western portion of Jamestown Island was surveyed or included in the data set.

Breeding Bird Survey (BBS) – This data set is based on observations gathered as part of an ongoing program between the U.S. Fish and Wildlife Service and the Canadian Wildlife Service which attempts to estimate population trends of nesting birds in North America that also migrate across international boundaries. These observations are based on routes (usually roads) taken by volunteers during the breeding season (Figure 5 for example). Again, the route is not contained within the JI400PA but does include it. It cannot be determined from the species list, where along the route the bird was observed so there is uncertainty if it breeds in the JI400 PA.

Biota of Virginia (BOVA) – This database contains county-level distribution information and was developed as part of a cooperative research project between VDGIF and Virginia Polytechnic Institute and State University. Because the resolution of this data is not precise, if this is the only database purporting the occurrence of a species within the search area, it is not considered ‘confirmed’ by VDGIF. The species was kept in this summary report list with the indication that it is not confirmed and its presence within the JI400PA should not be assumed.

Collections (C) – This data set was developed by VDGIF for storing information based on annual reporting of information provided by researchers under the Scientific Collection Permit. It also includes location information from various reports, museum records, VDGIF staff field observations, BBA project additions, VDGIF warm water stream surveys, Jenkins and Burkhead (1994), and HERPS database (see also Mitchell and Reay, 1999). This information is given as a ‘point’ covering a smaller area than the other databases (Figure 6 for example). The points were reviewed to decide if the observation was within the project area. Points observed directly adjacent to the JI400PA are indicated because the representation of the point may be shifted (for example, observations of terrestrial animals may be displayed as being in the river because of mapping inaccuracies), and because the animals are mobile and able to move freely from the observation site outside the project area to similar habitat within the project area.

Christmas Bird Count (CBC) – This database contains 30 years of bird observations made by volunteers during a two-week period in December. Though a useful data set in demonstrating general trends in overall bird populations, it is not precise enough to determine which species occur in the JI400PA nor does it provide information on the breeding status of the species in the area. VDGIF considers a species reported only by the CBC to be confirmed within the two-mile search radius. However, only a small fraction of the CBC survey radius encompasses the JI400PA (Figure 7) and a species presence on the study area should not be assumed.

*Other reports and personal communications* - When available, reports on the JI400PA or to CNHP were utilized if the location or the observations/collections was within the JI400PA. Likewise, experts on the fauna of the area were consulted. These sources are cited as used.

## SUMMARY

The vascular plant list compiled for the JI400PA includes approximately 593 taxa within 349 genera and 107 families. The families with the largest number of taxa include Asteraceae (76 taxa), Poaceae (76 taxa) Cyperaceae (51 taxa), and Fabaceae (36 taxa); these families alone represent 40% of the flora. The approximation in the number of taxa is due to the fact that certain taxa listed in some sources may not have been keyed to a variety or subspecies that was determined in another source, but may in fact be the same taxon. The larger number of taxa found in 2000-2001 than the 491 taxa in 306 genera and 95 families found in 1969-1970 (Loetterle 1970) is to be expected as the study area in 2000-2001 was larger, extending to areas beyond Jamestown Island proper. However, a comparison with Loetterle's 1970 flora is also not strictly applicable due to the nomenclature changes over the years that have resulted in the merging or splitting of taxa and even changes at the higher level of family names.

Notable rare members of the flora are *Aeschynomene virginica* (sensitive joint-vetch), a globally rare and federally listed threatened species, and the state rare grass *Steinchisma hians* (gaping panic grass), whose only extant Virginia population is on Jamestown Island (Chazal and Van Alstine 2001 draft report). The species in the study area that are tracked by DCR-DNH, including the rare species and the watchlist species, are noted in Table 1.

Loetterle (1970) noted thirty years ago that although disturbed areas are a small percentage of the island, they account for the greater proportion of the island's flora. This is probably still valid, particularly as species diversity was found to be low in 2001 in the plots sampled in the undisturbed or at least less disturbed natural vegetation communities (J.T. Weber pers. comm. 2002). Due to the period of more than 30 years spanned by the sources, it is possible that some species collected by Loetterle in 1970 or North in 1984 may no longer persist in the study area. This may be true particularly in light of the appearance and rapid spread since 1970 of the highly invasive grass *Microstegium vimineum* (Japanese stiltgrass), noted by Grubbs (2000) as occurring in large dense patches in streamside, roadside and moist forest habitats throughout the study area. This and other invasive exotics such as *Lonicera japonica* (Japanese honeysuckle), *Cynodon dactylon* (Bermuda grass), and *Ligustrum sinense* (Chinese privet), among others reported by Grubbs (2000), pose a serious threat to the diversity of the native taxa of the Jamestown Island area. Caution then should be taken in using the data in the plant list to conclude anything about the current status of vascular plant diversity within the study area, given the age of some of the sources of plant data, the spread of exotic plant species that are displacing native species, and even possible changes in the marsh vegetation over the last 30 years brought about by salinity changes due to sea level rise.

The animal list is comprised of approximately 115 vertebrate families with 482 taxa represented and 17 families of invertebrates (selected families of Lepidoptera and Odonata) represented by 164 taxa. The approximation in numbers is used because the list contains animals with varying degrees of likelihood to occur on the JI400PA, including fauna observed within the study area, fauna observed adjacent to the study area, and fauna reported as only county records. A few taxa are listed at two subspecies levels, however in most cases, probably only one of these subspecies persists in the JI400PA. Further research is needed to clarify the ranges of some of these taxa.

The birds are by far the largest group represented with 52 families and 268 taxa reported. However, this group has the most difficult data to interpret with breeding surveys and Christmas bird counts including both the JI400PA and extensive areas surrounding it. Surveys targeting the JI400PA may be warranted to document the diversity of the avifauna. The fish (27 families, 72 species), amphibian (11 families, 44 species), and reptile (10 families, 47 species) records are mostly comprised of observational data within the study area. The mammals (15 families, 51 species) are the most poorly known of the vertebrates with county records (i.e., BOVA) as the main source. Surveys should be conducted for mammals in the JI400PA to document the diversity and aid in management plans. The Lepidoptera (13 families) and Odonata (4 families) lists are based almost entirely on observational data, but they are not very extensive and could benefit from targeted surveys.

Animals tracked by DCR-DNH as rare, threatened or endangered and known to occur in the JI400PA include the federally and Virginia endangered Bald Eagle (*Haliaeetus leucocephalus*) and the Rare Skipper (*Problema bulenta*), a globally rare skipper (Chazal and Van Alstine, 2001; Roble, 2001). Past DCR-DNH reports to CNHP (e.g., Ludwig et al., 1993) also include the Least Bittern (*Ixobrychus exilis*). However this species has recently been removed from the DCR-DNH tracking list and placed on the watchlist as reports of its breeding activity in the state have increased (Roble, pers. comm.).

In conclusion, the flora of the JI400PA has been more extensively documented than the fauna. The current status of the plant diversity within the JI400PA cannot be reliably ascertained from the list in this report (Table 1). This is due to the effects of various habitat disturbances over the years including the spread of exotic plant species and sea level rise, and differences in the goals and survey areas of the various flora surveys. The assessment of animal diversity is not clear and further surveys are warranted to complete a reliable species list for the JI400PA.

**Table 1. Vascular plant list of the Jamestown Island 400 Project Area.**

**Tracked by DRC-DNH:** 'Y' indicates that a species is tracked as rare, threatened or endangered by DCR-DNH. 'W' indicates that it is on the DCR-DNH watchlist, a list of taxa that are uncommon or with uncertain status in Virginia. See Townsend (2001) for details.

**Source:** The abbreviations used for these sources are as follows: Be = Bell 1990; Br = Bruce (N.D.); D = observations recorded during surveys for DCR-DNH from 1990-1998; G = Grubbs (2000); L=Loetterle (1970); M = Moore (1980); N = North (1984); V = observations by N.E. Van Alstine or other botanists during the 2000-2001 DCR-DNH rare plant survey; W = species lists from vegetation plots sampled by DCR-DNH ecologists J. T. Weber and P. P. Coulling during the 2001 vegetation classification project.

Family	Taxon	Tracked by Source DCR-DNH	Comments
ACANTHACEAE	<i>Justicia americana</i>	L	
ACANTHACEAE	<i>Ruellia caroliniensis</i>	L, V	
ACERACEAE	<i>Acer negundo</i>	L	
ACERACEAE	<i>Acer platanoides</i>	L, V	
ACERACEAE	<i>Acer rubrum</i>	V, N, L, W	
ACERACEAE	<i>Acer saccharinum</i>	L	
AGAVACEAE	<i>Yucca filamentosa</i>	L, V	
ALISMATACEAE	<i>Sagittaria lancifolia</i> ssp. <i>media</i>	V, N, L, M, W	
ALISMATACEAE	<i>Sagittaria subulata</i>	W, V	
AMARANTHACEAE	<i>Amaranthus cannabinus</i>	V, N, L, M, D, W	
ANACARDIACEAE	<i>Rhus copallina</i>	L	
ANACARDIACEAE	<i>Toxicodendron radicans</i>	V, N, L, W	
APIACEAE	<i>Centella erecta</i>	L, V	
APIACEAE	<i>Chaerophyllum tainturieri</i>	L	
APIACEAE	<i>Cicuta maculata</i> var. <i>maculata</i>	V, N, L, W	
APIACEAE	<i>Daucus carota</i>	L	
APIACEAE	<i>Eryngium aquaticum</i>	L, V, D	
APIACEAE	<i>Foeniculum vulgare</i>	L	
APIACEAE	<i>Hydrocotyle prolifera</i>	L	
APIACEAE	<i>Hydrocotyle ranunculacea</i>	V	
APIACEAE	<i>Hydrocotyle verticillata</i>	V, N, L, W	
APIACEAE	<i>Lilaeopsis chinensis</i>	V, L, D	
APIACEAE	<i>Ptilimnium capillaceum</i>	V, N, L	

APIACEAE	<i>Sanicula canadensis</i>	L
APIACEAE	<i>Sium suave</i>	L, M
APOCYNACEAE	<i>Apocynum cannabinum</i>	L
APOCYNACEAE	<i>Vinca minor</i>	V, G
AQUIFOLIACEAE	<i>Ilex decidua</i>	V, L, W
AQUIFOLIACEAE	<i>Ilex opaca</i>	V, L, W
AQUIFOLIACEAE	<i>Ilex verticillata</i>	V, L
ARACEAE	<i>Arisaema triphyllum</i>	V, L
ARACEAE	<i>Peltandra virginica</i>	V, N, L, D, W, Be, M
ARALIACEAE	<i>Aralia spinosa</i>	V, L, W
ARALIACEAE	<i>Hedera helix</i>	V, L, G,W
ASCLEPIADACEAE	<i>Asclepias incarnata</i>	V, L, D
ASCLEPIADACEAE	<i>Asclepias lanceolata</i>	L
ASCLEPIADACEAE	<i>Asclepias tuberosa</i>	L
ASCLEPIADACEAE	<i>Asclepias variegata</i>	L
ASCLEPIADACEAE	<i>Matelea gonocarpos</i>	L   Sterile <i>Matelea</i> sp. observed by V.
ASPLENIACEAE	<i>Asplenium platyneuron</i> var. <i>platyneuron</i>	V, L, Br, W
ASTERACEAE	<i>Achillea millefolium</i>	L
ASTERACEAE	<i>Ageratina altissima</i>	L
ASTERACEAE	<i>Ageratina aromatica</i>	L
ASTERACEAE	<i>Ambrosia artemisiifolia</i>	L
ASTERACEAE	<i>Antennaria parlinii</i> ssp. <i>parlinii</i>	V, L
ASTERACEAE	<i>Antennaria plantaginifolia</i>	L
ASTERACEAE	<i>Anthemis arvensis</i>	L
ASTERACEAE	<i>Arnica acaulis</i>	L
ASTERACEAE	<i>Artemisia vulgaris</i>	V
ASTERACEAE	<i>Baccharis halimifolia</i>	V, N, L, M, W
ASTERACEAE	<i>Bidens aristosa</i>	N
ASTERACEAE	<i>Bidens bipinnata</i>	L
ASTERACEAE	<i>Bidens coronata</i>	L, V
ASTERACEAE	<i>Bidens discoidea</i>	L
ASTERACEAE	<i>Bidens frondosa</i>	L

ASTERACEAE	<i>Bidens laevis</i>	N, V, L
ASTERACEAE	<i>Chrysopsis mariana</i>	L
ASTERACEAE	<i>Cichorium intybus</i>	L
ASTERACEAE	<i>Cirsium discolor</i>	V, L
ASTERACEAE	<i>Cirsium horridulum</i>	L, V
ASTERACEAE	<i>Cirsium vulgare</i>	L
ASTERACEAE	<i>Conoclinium coelestinum</i>	L
ASTERACEAE	<i>Conyza canadensis</i>	L
ASTERACEAE	<i>Eclipta prostrata</i>	N, L
ASTERACEAE	<i>Elephantopus carolinianus</i>	L
ASTERACEAE	<i>Elephantopus nudatus</i>	V
ASTERACEAE	<i>Elephantopus tomentosus</i>	V, L
ASTERACEAE	<i>Erechtites hieraciifolia</i>	N, L
ASTERACEAE	<i>Erigeron annuus</i>	L
ASTERACEAE	<i>Erigeron philadelphicus</i>	L
ASTERACEAE	<i>Erigeron strigosus</i>	L
ASTERACEAE	<i>Eupatorium album</i>	L
ASTERACEAE	<i>Eupatorium capillifolium</i>	V, L, W
ASTERACEAE	<i>Eupatorium serotinum</i>	V
ASTERACEAE	<i>Euthamia caroliniana</i>	L
ASTERACEAE	<i>Euthamia graminifolia</i>	L
ASTERACEAE	<i>Gamochaeta purpurea</i>	V, L
ASTERACEAE	<i>Helenium autumnale</i>	V, L
ASTERACEAE	<i>Hieracium caespitosum</i>	L
ASTERACEAE	<i>Hieracium gronovii</i>	L, W
ASTERACEAE	<i>Hieracium venosum</i>	V, L
ASTERACEAE	<i>Hypochaeris radicata</i>	L
ASTERACEAE	<i>Iva frutescens</i>	V, L, M
ASTERACEAE	<i>Krigia dandelion</i>	L
ASTERACEAE	<i>Krigia virginica</i>	V, L
ASTERACEAE	<i>Lactuca canadensis</i>	L
ASTERACEAE	<i>Leucanthemum vulgare</i>	L
ASTERACEAE	<i>Liatris pilosa</i>	L

ASTERACEAE	<i>Mikania scandens</i>	V, N, L, W	
ASTERACEAE	<i>Packera anonyma</i>	L	
ASTERACEAE	<i>Packera aurea</i>	V, L	
ASTERACEAE	<i>Packera tomentosa</i>	L	
ASTERACEAE	<i>Pityopsis graminifolia</i>	L, W	
ASTERACEAE	<i>Pluchea camphorata</i>	L	
ASTERACEAE	<i>Pluchea foetida</i> var. <i>foetida</i>	V, N, L	
ASTERACEAE	<i>Pluchea odorata</i>	N, L, M, V, W	
ASTERACEAE	<i>Pyrrhopappus carolinianus</i>	L	
ASTERACEAE	<i>Smallanthus uvedalia</i>	L	
ASTERACEAE	<i>Solidago altissima</i>	L	
ASTERACEAE	<i>Solidago bicolor</i>	L	
ASTERACEAE	<i>Solidago caesia</i>	V	
ASTERACEAE	<i>Solidago juncea</i>	L	
ASTERACEAE	<i>Solidago pinetorum</i>	L	
ASTERACEAE	<i>Solidago rugosa</i> ssp. <i>aspera</i>	L	
ASTERACEAE	<i>Solidago sempervirens</i>	N, L	Variety not listed.
ASTERACEAE	<i>Solidago sempervirens</i> var. <i>mexicana</i>	W	W, V
ASTERACEAE	<i>Sonchus asper</i>	L	
ASTERACEAE	<i>Symphyotrichum dumosum</i>	L, V	<i>Symphyotrichum</i> = Aster
ASTERACEAE	<i>Symphyotrichum novi-belgii</i>	N, V, W	<i>Symphyotrichum</i> = Aster
ASTERACEAE	<i>Symphyotrichum pilosum</i> var. <i>pilosum</i>	L	<i>Symphyotrichum</i> = Aster
ASTERACEAE	<i>Symphyotrichum subulatum</i>	N, V, L, W	<i>Symphyotrichum</i> = Aster
ASTERACEAE	<i>Symphyotrichum tenuifolium</i>	L, M	<i>Symphyotrichum</i> = Aster
ASTERACEAE	<i>Taraxacum officinale</i>	V, L	
ASTERACEAE	<i>Verbesina occidentalis</i>	V, L	
ASTERACEAE	<i>Vernonia noveboracensis</i>	L, M	
ASTERACEAE	<i>Xanthium strumarium</i>	L	
AZOLLACEAE	<i>Azolla caroliniana</i>	L	
BALSAMINACEAE	<i>Impatiens capensis</i>	V, L, M	
BERBERIDACEAE	<i>Berberis thunbergii</i>	L, G	
BERBERIDACEAE	<i>Podophyllum peltatum</i>	V, L	
BETULACEAE	<i>Alnus serrulata</i>	L	

BETULACEAE	<i>Betula nigra</i>	V
BETULACEAE	<i>Carpinus caroliniana</i>	V, L
BIGNONIACEAE	<i>Bignonia capreolata</i>	L
BIGNONIACEAE	<i>Campsis radicans</i>	V, N, L
BIGNONIACEAE	<i>Catalpa speciosa</i>	L
BLECHNACEAE	<i>Woodwardia areolata</i>	V, L, Br
BLECHNACEAE	<i>Woodwardia virginica</i>	L, Br, V
BORAGINACEAE	<i>Cynoglossum virginianum</i>	V, L
BORAGINACEAE	<i>Hackelia virginiana</i>	L
BORAGINACEAE	<i>Myosotis stricta</i>	L
BORAGINACEAE	<i>Myosotis verna</i>	L
BRASSICACEAE	<i>Arabidopsis thaliana</i>	L
BRASSICACEAE	<i>Barbarea verna</i>	L
BRASSICACEAE	<i>Barbarea vulgaris</i>	L
BRASSICACEAE	<i>Brassica napus</i>	L
BRASSICACEAE	<i>Capsella bursa-pastoris</i>	L
BRASSICACEAE	<i>Cardamine hirsuta</i>	L
BRASSICACEAE	<i>Draba verna</i>	V, L
BRASSICACEAE	<i>Lepidium virginicum</i>	L
BUDDLEJACEAE	<i>Polypteron procumbens</i>	L
CACTACEAE	<i>Opuntia humifusa</i>	L
CAMPANULACEAE	<i>Lobelia cardinalis</i>	L, M
CAMPANULACEAE	<i>Lobelia inflata</i>	L
CAMPANULACEAE	<i>Lobelia puberula</i>	L
CAMPANULACEAE	<i>Triodanis perfoliata</i>	L
CAPRIFOLIACEAE	<i>Lonicera japonica</i>	V, L
CAPRIFOLIACEAE	<i>Sambucus nigra</i> ssp. <i>canadensis</i>	L
CAPRIFOLIACEAE	<i>Viburnum prunifolium</i>	V, L
CARYOPHYLLACEAE	<i>Cerastium glomeratum</i>	L
CARYOPHYLLACEAE	<i>Cerastium vulgatum</i> ssp. <i>vulgare</i>	L
CARYOPHYLLACEAE	<i>Dianthus armeria</i>	L
CARYOPHYLLACEAE	<i>Sagina decumbens</i>	V
CARYOPHYLLACEAE	<i>Saponaria officinalis</i>	L

CARYOPHYLLACEAE	<i>Silene caroliniana</i> ssp. <i>pensylvanica</i>	L	
CARYOPHYLLACEAE	<i>Silene stellata</i>	L	
CARYOPHYLLACEAE	<i>Stellaria media</i>	V, G	
CELASTRACEAE	<i>Euonymus americanus</i>	V, L	
CERATOPHYLLACEAE	<i>Ceratophyllum echinatum</i>	L	
CHENOPODIACEAE	<i>Atriplex prostrata</i>	V	
CHENOPODIACEAE	<i>Chenopodium ambrosioides</i>	V, L	
CISTACACEAE	<i>Hudsonia tomentosa</i>	L	
CISTACACEAE	<i>Lechea racemulosa</i>	L	
CLUSIACEAE	<i>Hypericum gymnanthum</i>	L	
CLUSIACEAE	<i>Hypericum hypericoides</i>	L, V	
CLUSIACEAE	<i>Hypericum mutilum</i>	L	
CLUSIACEAE	<i>Hypericum punctatum</i>	L	
COMMELINACEAE	<i>Commelina communis</i>	V, L	
COMMELINACEAE	<i>Murdannia keisak</i>	V, L, G	
CONVOLVULACEAE	<i>Calystegia sepium</i>	V	
CONVOLVULACEAE	<i>Ipomoea hederacea</i>	L	
CORNACEAE	<i>Cornus florida</i>	V, L, W	
CORNACEAE	<i>Cornus foemina</i>	N, W	
CORNACEAE	<i>Nyssa aquatica</i>	D	Observation in 1991 needs confirmation. Not documented with a specimen for James City County, according to Harvill et al. 1992 and G.P. Fleming pers. comm. 2002.
CORNACEAE	<i>Nyssa sylvatica</i>	V, N, L, W	
CURCUBITACEAE	<i>Melothria pendula</i>	L	
CUPRESSACEAE	<i>Juniperus virginiana</i> var. <i>virginiana</i>	V, N, L, W	
CUPRESSACEAE	<i>Taxodium distichum</i>	V, L, M, W	
CUSCUTACEAE	<i>Cuscuta pentagona</i>	L	
CYPERACEAE	<i>Carex alata</i>	N, L	
CYPERACEAE	<i>Carex albicans</i> var. <i>emmonsii</i>	V	
CYPERACEAE	<i>Carex annectans</i>	L	
CYPERACEAE	<i>Carex blanda</i>	L, V	
CYPERACEAE	<i>Carex cephalophora</i>	V	

CYPERACEAE	<i>Carex comosa</i>	L	
CYPERACEAE	<i>Carex complanata</i>	L	
CYPERACEAE	<i>Carex festucacea</i>	N	
CYPERACEAE	<i>Carex flaccosperma</i>	V	
CYPERACEAE	<i>Carex frankii</i>	N	
CYPERACEAE	<i>Carex grayi</i>	L	
CYPERACEAE	<i>Carex hirsutella</i>	W, V	
CYPERACEAE	<i>Carex hormathodes</i>	V	
CYPERACEAE	<i>Carex hyalinolepis</i>	V, W, L	Loetterle lists <i>Carex lacustris</i> , a state rare species, but this species has not been found in other surveys. Instead a similar species, <i>C. hyalinolepis</i> has been documented. This taxon was formerly called <i>C. lacustris</i> var. <i>laxiflora</i> and Loetterle's <i>C. lacustris</i> is assumed here to be <i>C. hyalinolepis</i> .
CYPERACEAE	<i>Carex longii</i>	L	
CYPERACEAE	<i>Carex lupulina</i>	L, V	
CYPERACEAE	<i>Carex lurida</i>	N, L, V	
CYPERACEAE	<i>Carex pensylvanica</i>	W	
CYPERACEAE	<i>Carex retroflexa</i>	L	
CYPERACEAE	<i>Carex stipata</i>	N	
CYPERACEAE	<i>Carex stricta</i>	M	
CYPERACEAE	<i>Carex swanii</i>	V, L	
CYPERACEAE	<i>Carex tribuloides</i>	V	
CYPERACEAE	<i>Carex typhina</i>	L	
CYPERACEAE	<i>Carex vulpinoidea</i>	N, L	
CYPERACEAE	<i>Cyperus echinatus</i>	N, L, V	
CYPERACEAE	<i>Cyperus esculentus</i> var. <i>leptostachyus</i>	V	
CYPERACEAE	<i>Cyperus filicinus</i>	V, W	
CYPERACEAE	<i>Cyperus grayi</i>	L	
CYPERACEAE	<i>Cyperus odoratus</i>	N, W	
CYPERACEAE	<i>Cyperus polystachyos</i> var. <i>texensis</i>	N	
CYPERACEAE	<i>Cyperus retrofractus</i>	L	

CYPERACEAE	<i>Cyperus retrorsus</i>	L	
CYPERACEAE	<i>Cyperus strigosus</i>	N, V	
CYPERACEAE	<i>Eleocharis engelmannii</i>	L	
CYPERACEAE	<i>Eleocharis fallax</i>	N, V, D	
CYPERACEAE	<i>Eleocharis obtusa</i>	N	
CYPERACEAE	<i>Eleocharis olivacea</i>	V	
CYPERACEAE	<i>Eleocharis palustris</i>	W	
CYPERACEAE	<i>Eleocharis parvula</i>	W, N	
CYPERACEAE	<i>Eleocharis rostellata</i>	W	V, W
CYPERACEAE	<i>Kyllinga gracillima</i>	V	
CYPERACEAE	<i>Rhynchospora caduca</i>	N	
CYPERACEAE	<i>Rhynchospora corniculata</i>	V, L	
CYPERACEAE	<i>Rhynchospora macrostachya</i>	V	
CYPERACEAE	<i>Schoenoplectus americanus</i>	N , W, D, V	<i>Scirpus americanus</i> (a misapplied name) listed by Loetterle is now <i>Schoenoplectus pungens</i>
CYPERACEAE	<i>Schoenoplectus novae-angliae</i>	W	V
CYPERACEAE	<i>Schoenoplectus pungens</i> var. <i>pungens</i>	V, M, L, W	
CYPERACEAE	<i>Schoenoplectus robustus</i>	V, L, M, W, D	
CYPERACEAE	<i>Schoenoplectus tabernaemontani</i>	V, N, L, M, W	
CYPERACEAE	<i>Scirpus cyperinus</i>	V, L	
DENNSTAEDTIACEAE	<i>Dennstaedtia punctilobula</i>	L, Br	
DENNSTAEDTIACEAE	<i>Pteridium aquilinum</i>	V	Variety indeterminant.
DENNSTAEDTIACEAE	<i>Pteridium aquilinum</i> var. <i>latiusculum</i>	L, Br	
DIOSCORACEAE	<i>Dioscorea quaternata</i>	L	
DRYOPTERIDACEAE	<i>Athyrium filix-femina</i>	L, Br	
DRYOPTERIDACEAE	<i>Dryopteris carthusiana</i>	L	Current Kartesz (1999) nomenclature IF = <i>D. spinulosa</i> var. <i>spinulosa</i>
DRYOPTERIDACEAE	<i>Dryopteris celsa</i>	L, Br	
DRYOPTERIDACEAE	<i>Onoclea sensibilis</i>	L, Br	
DRYOPTERIDACEAE	<i>Polystichum acrostichoides</i>	V, L, Br	
EBENACEAE	<i>Diospyros virginiana</i>	V, N, L	
ERICACEAE	<i>Epigaea repens</i>	L	

ERICACEAE	<i>Gaylussacia baccata</i>	L, W
ERICACEAE	<i>Gaylussacia frondosa</i>	V, L
ERICACEAE	<i>Oxydendrum arboreum</i>	L
ERICACEAE	<i>Vaccinium caesariensis</i>	L
ERICACEAE	<i>Vaccinium corymbosum</i>	V
ERICACEAE	<i>Vaccinium fuscatum</i>	L
ERICACEAE	<i>Vaccinium stamineum</i>	L
EUPHORBIACEAE	<i>Acalypha gracilens</i>	L
EUPHORBIACEAE	<i>Euphorbia corollata</i>	L
FABACEAE	<i>Aeschynomene virginica</i>	Y V
FABACEAE	<i>Amphicarpaea bracteata</i>	L
FABACEAE	<i>Albizia julibrissin</i>	L, G
FABACEAE	<i>Apis americana</i>	V, N, L
FABACEAE	<i>Baptisia tinctoria</i>	V, L, W
FABACEAE	<i>Centrosema virginianum</i>	L
FABACEAE	<i>Cercis canadensis</i>	V, L
FABACEAE	<i>Chamaecrista fasciata</i>	L, V
FABACEAE	<i>Chamaecrista nictitans</i>	L
FABACEAE	<i>Clitoria mariana</i>	L
FABACEAE	<i>Coronaria varia</i>	G
FABACEAE	<i>Cytisus scoparius</i>	L
FABACEAE	<i>Desmodium nudiflorum</i>	L
FABACEAE	<i>Desmodium viridiflorum</i>	L
FABACEAE	<i>Gleditsia triacanthos</i>	L
FABACEAE	<i>Kummerowia stipulacea</i>	V
FABACEAE	<i>Lathyrus hirsutus</i>	L
FABACEAE	<i>Lespedeza cuneata</i>	V, L, G
FABACEAE	<i>Lespedeza repens</i>	L
FABACEAE	<i>Medicago lupulina</i>	L
FABACEAE	<i>Melilotus officinalis</i>	L, G
Includes <i>M. alba</i> .		
FABACEAE	<i>Robinia pseudoacacia</i>	V, L, W
FABACEAE	<i>Strophostyles umbellata</i>	L
FABACEAE	<i>Stylosanthes biflora</i>	L

FABACEAE	<i>Tephrosia</i> sp.	L
FABACEAE	<i>Trifolium arvense</i>	L, V
FABACEAE	<i>Trifolium dubium</i>	V
FABACEAE	<i>Trifolium pratense</i>	L
FABACEAE	<i>Trifolium procumbens</i>	L
FABACEAE	<i>Trifolium repens</i>	L, V
FABACEAE	<i>Vicia hirsuta</i>	L
FABACEAE	<i>Vicia lathyroides</i>	L
FABACEAE	<i>Vicia sativa</i> ssp. <i>nigra</i>	L
FABACEAE	<i>Vicia sativa</i> ssp. <i>sativa</i>	V
FABACEAE	<i>Vicia villosa</i> ssp. <i>varia</i>	L
FABACEAE	<i>Wisteria sinensis</i>	V, G
FAGACEAE	<i>Fagus grandifolia</i>	V, L
FAGACEAE	<i>Quercus alba</i>	V, L, W
FAGACEAE	<i>Quercus x beadlei</i>	W
FAGACEAE	<i>Quercus falcata</i>	V, L, W
FAGACEAE	<i>Quercus laurifolia</i>	L, W
FAGACEAE	<i>Quercus marilandica</i>	V, L
FAGACEAE	<i>Quercus nigra</i>	V
FAGACEAE	<i>Quercus pagoda</i>	V, N, L, W
FAGACEAE	<i>Quercus palustris</i>	L
FAGACEAE	<i>Quercus phellos</i>	V, L
FAGACEAE	<i>Quercus prinus</i>	V
FAGACEAE	<i>Quercus rubra</i>	W, V
FAGACEAE	<i>Quercus stellata</i>	V, L, W
FAGACEAE	<i>Quercus velutina</i>	V, L, W
FUMARIACEAE	<i>Fumaria officinalis</i>	L
GENTIANACEAE	<i>Sabatia angularis</i>	L
GENTIANACEAE	<i>Sabatia dodecandra</i>	L
GENTIANACEAE	<i>Sabatia stellaris</i>	L, D
GERANIACEAE	<i>Geranium carolinianum</i>	V, L
GERANIACEAE	<i>Geranium molle</i>	L
HAMAMELIDACEAE	<i>Liquidambar styraciflua</i>	V, L, W

IRIDACEAE	<i>Iris prismatica</i>	W	L
IRIDACEAE	<i>Iris pseudacorus</i>	D	
IRIDACEAE	<i>Iris virginica</i>	N, L	
IRIDACEAE	<i>Sisyrinchium angustifolium</i>	V, L	
IRIDACEAE	<i>Sisyrinchium mucronatum</i>	N	
JUNCACEAE	<i>Juncus acuminatus</i>	V, N, L	
JUNCACEAE	<i>Juncus biflorus</i>	V, L	
JUNCACEAE	<i>Juncus bufonius</i>	L	
JUNCACEAE	<i>Juncus coriaceus</i>	N, V, L	
JUNCACEAE	<i>Juncus effusus</i>	N, L, V	
JUNCACEAE	<i>Juncus roemerianus</i>	V, M	
JUNCACEAE	<i>Juncus tenuis</i> var. <i>tenuis</i>	V, L	
JUNCACEAE	<i>Luzula bulbosa</i>	V, L	
JUGLANDACEAE	<i>Carya alba</i>	V, L, W	
JUGLANDACEAE	<i>Carya glabra</i>	V, L, W	
JUGLANDACEAE	<i>Carya illinoiensis</i>	L, V	
JUGLANDACEAE	<i>Juglans nigra</i>	L	
LAMIACEAE	? <i>Calamintha nepeta</i> var. <i>nepeta</i>	L, V	"?" appears in Kartesz (1999).
LAMIACEAE	<i>Glechoma hederacea</i>	V, L, G	
LAMIACEAE	<i>Lamium amplexicaule</i>	L	
LAMIACEAE	<i>Mentha arvensis</i>	L	
LAMIACEAE	<i>Perilla frutescens</i>	V, G	
LAMIACEAE	<i>Prunella vulgaris</i>	L	
LAMIACEAE	<i>Pycnanthemum tenuifolium</i>	L	
LAMIACEAE	<i>Salvia lyrata</i>	V, L	
LAMIACEAE	<i>Scutellaria elliptica</i>	L	
LAMIACEAE	<i>Scutellaria integrifolia</i>	V, L	
LAMIACEAE	<i>Teucrium canadense</i>	V, L, W	
LAMIACEAE	<i>Trichostema dichotomum</i>	L	
LAURACEAE	<i>Lindera benzoin</i> var. <i>pubescens</i>	V, L	
LAURACEAE	<i>Persea palustris</i>	V, L, W	
LAURACEAE	<i>Sassafras albidum</i>	V, L, W	
LEMNACEAE	<i>Lemna</i> sp.	V	

LEMNACEAE	<i>Lemna minor</i>	L
LEMNACEAE	<i>Lemna perpusilla</i>	N
LEMNACEAE	<i>Spirodela polyrrhiza</i>	L
LEMNACEAE	<i>Wolffia brasiliensis</i>	L
LILIACEAE	<i>Allium canadense</i>	N, L
LILIACEAE	<i>Allium vineale</i>	V, L
LILIACEAE	<i>Asparagus officinalis</i>	V, N, L
LILIACEAE	<i>Hypoxis hirsuta</i>	V, L
LILIACEAE	<i>Narcissus pseudonarcissus</i>	L
LILIACEAE	<i>Nothoscordum bivalve</i>	W L
LILIACEAE	<i>Ornithogalum umbellatum</i>	V, L
LILIACEAE	<i>Polygonatum biflorum</i>	L
LILIACEAE	<i>Zephyranthes atamasca</i>	V, L
LOGANIACEAE	<i>Gelsemium sempervirens</i>	V
LYCOPODIACEAE	<i>Huperzia lucidula</i>	Br
LYCOPODIACEAE	<i>Lycopodium digitatum</i>	V, L, Br
LYCOPODIACEAE	<i>Lycopodium obscurum</i>	V
LYTHRACEAE	<i>Ammania latifolia</i>	V
LYTHRACEAE	<i>Decodon verticillatus</i>	V, N, L
LYTHRACEAE	<i>Lagerstroemia indica</i>	L
LYTHRACEAE	<i>Lythrum lineare</i>	L, M, W
MAGNOLIACEAE	<i>Liriodendron tulipifera</i>	V, L, W
MAGNOLIACEAE	<i>Magnolia grandiflora</i>	V, L
MALVACEAE	<i>Hibiscus moscheutos</i>	V, N, L, M, W
MALVACEAE	<i>Kosteletzky virginica</i>	N, V, L, M, D, W
MELASTOMATACEAE	<i>Rhexia mariana</i> var. <i>ventricosa</i>	L
MELIACEAE	<i>Melia azedarach</i>	L
MONOTROPACEAE	<i>Monotropa uniflora</i>	L
MORACEAE	<i>Morus alba</i>	L, G
MORACEAE	<i>Morus rubra</i>	L
MYRICACEAE	<i>Morella cerifera</i>	V, N, L, W
NAJADACEAE	<i>Najas</i> sp.	V Sterile.
NYMPHAEACEAE	<i>Nuphar lutea</i>	M

OLEACEAE	<i>Forsythia</i> cf. <i>viridissima</i>	V	
OLEACEAE	<i>Fraxinus americana</i>	L	
OLEACEAE	<i>Fraxinus pennsylvanica</i>	V, N, L, W	
OLEACEAE	<i>Ligustrum sinense</i>	L, V, G	
OLEACEAE	<i>Ligustrum vulgare</i>	L	
ONAGRACEAE	<i>Circaeа lutetiana</i> ssp. <i>canadensis</i>	L	
ONAGRACEAE	<i>Ludwigia alternifolia</i>	N, L	
ONAGRACEAE	<i>Ludwigia decurrens</i>	N	
ONAGRACEAE	<i>Ludwigia palustris</i>	V, L, W	
ONAGRACEAE	<i>Oenothera biennis</i>	L	
ONAGRACEAE	<i>Oenothera laciniata</i>	L	
OPHIOGLOSSACEAE	<i>Botrychium virginianum</i>	V, L, Br	
OPHIOGLOSSACEAE	<i>Ophioglossum vulgatum</i>	L, V, D	
ORCHIDACEAE	<i>Cypripedium acaule</i>	L	
ORCHIDACEAE	<i>Goodyera pubescens</i>	L	
ORCHIDACEAE	<i>Liparis liliifolia</i>	L	
ORCHIDACEAE	<i>Listera australis</i>	L, D	
ORCHIDACEAE	<i>Malaxis unifolia</i>	L	
ORCHIDACEAE	<i>Platanthera cristata</i>	L	
ORCHIDACEAE	<i>Spiranthes odorata</i>	W	V, L
ORCHIDACEAE	<i>Spiranthes cernua</i>	N	Unclear if this may be referring to the same taxon as <i>S. odorata</i> which was formerly recognized as <i>S. cernua</i> var. <i>odorata</i> .
ORCHIDACEAE	<i>Tipularia discolor</i>	L	
OSMUNDACEAE	<i>Osmunda regalis</i> var. <i>spectabilis</i>	V, N, L, Br	
OXALIDACEAE	<i>Oxalis dillenii</i>	L, W	Formerly <i>O. stricta</i> .
OXALIDACEAE	<i>Oxalis stricta</i>	L	Formerly <i>O. europea</i> .
OXALIDACEAE	<i>Oxalis violacea</i>	V, L	
PAPAVERACEAE	<i>Sanguinaria canadensis</i>	L	
PASSIFLORACEAE	<i>Passiflora incarnata</i>	L	
PASSIFLORACEAE	<i>Passiflora lutea</i>	L	
PHYTOLOCACEAE	<i>Phytolacca americana</i>	L	
PINACEAE	<i>Pinus taeda</i>	V, N, L, W, D	

PINACEAE	<i>Pinus virginiana</i>	L
PLATANACEAE	<i>Platanus occidentalis</i>	V, L
PLANTAGINACEAE	<i>Plantago aristata</i>	L
PLANTAGINACEAE	<i>Plantago lanceolata</i>	V, L
PLANTAGINACEAE	<i>Plantago rugelii</i>	L
PLANTAGINACEAE	<i>Plantago virginica</i>	L
POACEAE	<i>Agrostis hyemalis</i>	V, L
POACEAE	<i>Agrostis perennans</i>	V, L
POACEAE	<i>Agrostis stolonifera</i>	V
POACEAE	<i>Aira elegans</i>	L
POACEAE	<i>Andropogon ternarius</i>	V
POACEAE	<i>Andropogon virginicus</i>	V, L, W
POACEAE	<i>Anthoxanthum odoratum</i>	V, N, L
POACEAE	<i>Arthraxon hispidus</i>	V, N, L
POACEAE	<i>Arundinaria gigantea</i>	V, L
POACEAE	<i>Axonopus furcatus</i>	W V
POACEAE	<i>Bromus commutatus</i>	L
POACEAE	<i>Cenchrus tribuloides</i>	L
POACEAE	<i>Chasmanthium laxum</i>	V, L, W
POACEAE	<i>Cinna arundinacea</i>	V, N, L, W
POACEAE	<i>Cynodon dactylon</i>	V, L, G
POACEAE	<i>Dactylis glomerata</i>	V, L, G
POACEAE	<i>Danthonia spicata</i>	V, L, W
POACEAE	<i>Dichanthelium acuminatum</i> var. <i>fasciculatum</i>	L
POACEAE	<i>Dichanthelium boscii</i>	V
POACEAE	<i>Dichanthelium clandestinum</i>	V, L
POACEAE	<i>Dichanthelium commutatum</i>	W, V
POACEAE	<i>Dichanthelium depauperatum</i>	V
POACEAE	<i>Dichanthelium dichotomum</i>	L, W, V
POACEAE	<i>Dichanthelium dichotomum</i> var. <i>ensifolium</i>	V
POACEAE	<i>Dichanthelium laxiflorum</i>	L

POACEAE	<i>Dichanthelium scoparium</i>	V, L	
POACEAE	<i>Dichanthelium sphaerocarpon</i>	L	
POACEAE	<i>Dichanthelium sphaerocarpon</i> var. <i>isophyllum</i>	L	
POACEAE	<i>Distichlis spicata</i>	V, W, M	
POACEAE	<i>Echinochloa crusgalli</i>	V	
POACEAE	<i>Echinochloa muricata</i> var. <i>muricata</i>	L	
POACEAE	<i>Echinochloa walteri</i>	V, W, N, L, M, D	
POACEAE	<i>Elymus virginicus</i>	V, N, L, W	
POACEAE	<i>Eragrostis spectabilis</i>	L	
POACEAE	<i>Festuca elatior</i>	N, L, G	The nomenclature from the original sources has been maintained for this taxon as under Kartesz (1999) this has been split into <i>Lolium arundinaceum</i> and <i>L. pratense</i> . It is unclear which taxon this is.
POACEAE	<i>Festuca subverticillata</i>	V	
POACEAE	<i>Holcus lanatus</i>	V, N, L, G	
POACEAE	<i>Hordeum pusillum</i>	L	
POACEAE	<i>Leersia oryzoides</i>	N, V, M, W	
POACEAE	<i>Leersia virginica</i>	V, N, W	
POACEAE	<i>Lolium arundinaceum</i>	V	
POACEAE	<i>Lolium perenne</i> ssp. <i>multiflorum</i>	V	
POACEAE	<i>Lolium perenne</i> ssp. <i>perenne</i>	L	
POACEAE	<i>Microstegium viminum</i>	V, W	
POACEAE	<i>Panicum amarum</i>	L	
POACEAE	<i>Panicum anceps</i>	V, L	
POACEAE	<i>Panicum anceps</i> var. <i>rhizomatum</i>	W	V
POACEAE	<i>Panicum dichotomiflorum</i>	V, N	
POACEAE	<i>Panicum rigidulum</i>	N	
POACEAE	<i>Panicum virgatum</i> var. <i>virgatum</i>	V, N, M, W	
POACEAE	<i>Paspalum dilatatum</i>	L	
POACEAE	<i>Paspalum floridanum</i>	V, L	
POACEAE	<i>Paspalum laeve</i>	N, V	
POACEAE	<i>Phragmites australis</i>	V, G, M, D	

POACEAE	<i>Phyllostachys aurea</i>	G, V	
POACEAE	<i>Poa annua</i>	V, L	
POACEAE	<i>Poa compressa</i>	N, L, G	
POACEAE	<i>Poa pratensis</i>	L, V	
POACEAE	<i>Saccharum giganteum</i>	V, N, L	
POACEAE	<i>Sacciolepis striata</i>	L	
POACEAE	<i>Schizachyrium scoparium</i>	V, L	
POACEAE	<i>Setaria pumila</i> ssp. <i>pumila</i>	L	Formerly <i>S. glauca</i> . Nomenclature in draft Flora of North America is followed here, in disagreement with Kartesz (1999). (Alan Weakley pers. comm. 2001).
POACEAE	<i>Setaria magna</i>	V, W	
POACEAE	<i>Setaria viridis</i>	L	
POACEAE	<i>Sorghum halepense</i>	G	
POACEAE	<i>Spartina alterniflora</i>	V, L, M, D, Be	
POACEAE	<i>Spartina cynosuroides</i>	V, N, M, D, W, Be	
POACEAE	<i>Spartina patens</i>	V, N, M, W, Be	
POACEAE	<i>Sphenopholis obtusata</i>	L, V	
POACEAE	<i>Sporobolus indicus</i>	V	
POACEAE	<i>Steinchisma hians</i>	Y	N, V
POACEAE	<i>Tridens flavus</i> var. <i>flavus</i>	L	
POACEAE	<i>Tripsacum dactyloides</i>	L, V	
POACEAE	<i>Vulpia myuros</i>	L	
POACEAE	<i>Zizania aquatica</i> var. <i>aquatica</i>	V, L, M, W, D, Be	
POACEAE	<i>Zizaniopsis miliacea</i>	V	
POLYGALACEAE	<i>Polygala mariana</i>	L	
POLYGALACEAE	<i>Polygala verticillata</i>	L	
POLYGONACEAE	<i>Polygonum arifolium</i>	V, N, L, M, W	
POLYGONACEAE	<i>Polygonum hydropiperoides</i>	L, V	M reports "smartweed" ( <i>Polygonum</i> spp.) but does not indicate species.
POLYGONACEAE	<i>Polygonum pensylvanicum</i>	L	
POLYGONACEAE	<i>Polygonum punctatum</i>	V, N, L, D, W	
POLYGONACEAE	<i>Polygonum sagittatum</i>	N, L	

POLYGONACEAE	<i>Polygonum virginianum</i>	L
POLYGONACEAE	<i>Rumex acetosella</i>	L, G
POLYGONACEAE	<i>Rumex conglomeratus</i>	N, L
POLYGONACEAE	<i>Rumex crispus</i>	N, L
POLYGONACEAE	<i>Rumex verticillata</i>	V, N, L, M, D, W
PONTERIDACEAE	<i>Heteranthera reniformis</i>	V, N, M
PONTERIDACEAE	<i>Pontederia cordata</i>	V, N, L, M, D, W
PORTULACACEAE	<i>Claytonia virginica</i>	L
PRIMULACEAE	<i>Anagallis arvensis</i>	L
PRIMULACEAE	<i>Lysimachia quadrifolia</i>	L
PRIMULACEAE	<i>Samolus valerandi</i>	V, N
PYROLACEAE	<i>Chimaphala maculata</i>	L, V, W
RANUNCULACEAE	<i>Clematis terniflora</i>	L, V
RANUNCULACEAE	<i>Ranunculus abortivus</i>	V, L
RANUNCULACEAE	<i>Ranunculus bulbosus</i>	V, L
RANUNCULACEAE	<i>Ranunculus parviflorus</i>	L
RANUNCULACEAE	<i>Ranunculus pusillus</i>	V, L
RANUNCULACEAE	<i>Ranunculus scleratus</i>	N, L
RHAMNACEAE	<i>Berchemia scandens</i>	V, L
ROSACEAE	<i>Agrimonia rostellata</i>	L
ROSACEAE	<i>Amelanchier canadensis</i>	L
ROSACEAE	<i>Duschenea indica</i>	V, L
ROSACEAE	<i>Photinia pyrifolia</i>	L
ROSACEAE	<i>Potentilla canadensis</i>	L
ROSACEAE	<i>Prunus armeniaca</i>	L
ROSACEAE	<i>Prunus avium</i>	L
ROSACEAE	<i>Prunus serotina</i> var. <i>serotina</i>	V, L, W
ROSACEAE	<i>Rosa eglanteria</i>	L
ROSACEAE	<i>Rosa micrantha</i>	L
ROSACEAE	<i>Rosa multiflora</i>	L, G
ROSACEAE	<i>Rosa palustris</i>	V, N, L
ROSACEAE	<i>Rosa wichuraiana</i>	L
ROSACEAE	<i>Rubus cuneifolius</i>	N

ROSACEAE	<i>Rubus phoenicolasius</i>	L, G
ROSACEAE	<i>Spiraea prunifolia</i>	L
RUBIACEAE	<i>Cephalanthus occidentalis</i>	L, W
RUBIACEAE	<i>Diodia teres</i>	L
RUBIACEAE	<i>Diodia virginiana</i>	V, N, L
RUBIACEAE	<i>Galium aparine</i>	V, L
RUBIACEAE	<i>Galium circaeans</i> var. <i>circaeans</i>	V
RUBIACEAE	<i>Galium obtusum</i>	N
RUBIACEAE	<i>Galim pilosum</i> var. <i>puncticulosum</i>	L
RUBIACEAE	<i>Galium tinctorium</i>	N, L, V
RUBIACEAE	<i>Galium uniflorum</i>	V, L
RUBIACEAE	<i>Houstonia caerulea</i>	V, L
RUBIACEAE	<i>Mitchella repens</i>	L
RUBIACEAE	<i>Sherardia arvensis</i>	V, L
SALICACEAE	<i>Populus alba</i>	G
SALICACEAE	<i>Populus heterophylla</i>	V
SALICACEAE	<i>Salix nigra</i>	N, L
SAURURACEAE	<i>Saururus cernuus</i>	V
SCROPHULARIACEAE	<i>Agalinis purpurea</i>	L
SCROPHULARIACEAE	<i>Agalinis setacea</i>	L
SCROPHULARIACEAE	<i>Aureolaria virginica</i>	L
SCROPHULARIACEAE	<i>Kickxia elatine</i>	L
SCROPHULARIACEAE	<i>Lindernia dubia</i> var. <i>dubia</i>	V
SCROPHULARIACEAE	<i>Mecardonia acuminata</i>	L
SCROPHULARIACEAE	<i>Nuttallanthus texanus</i>	L
SCROPHULARIACEAE	<i>Paulownia tomentosa</i>	L, G
SCROPHULARIACEAE	<i>Verbascum blattaria</i>	V, L
SCROPHULARIACEAE	<i>Verbascum thapsus</i>	L
SCROPHULARIACEAE	<i>Veronica arvensis</i>	L
SCROPHULARIACEAE	<i>Veronica hederifolia</i>	L
SCROPHULARIACEAE	<i>Veronica persica</i>	L
SCROPHULARIACEAE	<i>Veronica serpyllifolia</i>	L
SIMAROUBACEAE	<i>Ailanthus altissima</i>	L, G

SOLANACEAE	<i>Physalis heterophylla</i>	L
SOLANACEAE	<i>Solanum americanum</i>	L
SOLANACEAE	<i>Solanum carolinense</i>	L
SMILACACEAE	<i>Smilax rotundifolia</i>	V, N, L, W
SMILACACEAE	<i>Smilax tamnoides</i>	L
THELYPTERIDACEAE	<i>Phegopteris hexagonoptera</i>	L
THELYPTERIDACEAE	<i>Thelypteris noveboracensis</i>	L, Br
THELYPTERIDACEAE	<i>Thelypteris palustris</i> var. <i>pubescens</i>	V, N, L, Br, W
TYPHACEAE	<i>Typha angustifolia</i>	V, N, L, W, M
TYPHACEAE	<i>Typha x glauca</i>	W
TYPHACEAE	<i>Typha latifolia</i>	N, L, V, M
ULMACEAE	<i>Celtis laevigata</i>	V
ULMACEAE	<i>Celtis occidentalis</i>	L
ULMACEAE	<i>Ulmus alata</i>	L
ULMACEAE	<i>Ulmus americana</i>	N, L
ULMACEAE	<i>Ulmus rubra</i>	L, V
URTICACEAE	<i>Boehmeria cylindrica</i>	N, L, W
URTICACEAE	<i>Pilea cf. fontana</i>	W
VALERIANELLACEAE	<i>Valerianella locusta</i>	V, L
VALERIANELLACEAE	<i>Valerianella radiata</i>	L
VERBENACEAE	<i>Callicarpa americana</i>	V, L
VERBENACEAE	<i>Phyla lanceolata</i>	V, N, L
VERBENACEAE	<i>Verbena urticifolia</i>	V, L
VIOLACEAE	<i>Viola affinis</i>	L
VIOLACEAE	<i>Viola bicolor</i>	L
VIOLACEAE	<i>Viola cucullata</i>	V
VIOLACEAE	<i>Viola x palmata</i>	L
VIOLACEAE	<i>Viola sagittata</i> var. <i>ovata</i>	L
VIOLACEAE	<i>Viola sororia</i>	L
VIOLACEAE	<i>Viola triloba</i>	L
VITACEAE	<i>Parthenocissus quinquefolia</i>	V, L, W
VITACEAE	<i>Vitis aestivalis</i>	L
		<i>Vitis</i> sp. collected by N but not identified to species.

VITACEAE

*Vitis rotundifolia*

VITACEAE

*Vitis vulpina*

W

V, L

**Table 2. Fish reported from the Jamestown Island 400 Project Area.**

**Scientific Name** - A fish species list was unavailable from NPSpecies. If the presence of a species is corroborated by collections or observations from other listed sources, no further comment on its presence is indicated. This includes species where the VFWIS collection data is adjacent to and outside of the JI400PA but within the two-mile search radius (see below). If not supported by other databases, then the probability of its occurrence is indicated by N = No, U = Unlikely, and L = Likely. These are based on range maps (Jenkins and Burkhead, 1994) and the expertise of DCR-DNH staff.

**Federal/State Status:** Reflects the legal status of the species at the federal and state level. FE = federal endangered, FT = federal threatened, FS = federal species of concern, SE = state endangered, ST = state threatened, SS = state species of concern. Note: 'Species of concern' is not a legal designation. Status ranks were taken from VFWIS.

**Tracked by DRC-DNH:** 'Y' indicates that species is tracked as rare, threatened or endangered by DCR-DNH (Roble 2001). 'W' indicates it is on the DCR-DNH watchlist. Neither designation indicates the presence or absence of the species in the JI400PA.

**VFWIS Confirmed:** Presence of species is confirmed within the search area (Figure 3) based on the database source. Refer to the methods section for a discussion of interpretation limitations.

**VFWIS Database Source:** BOVA = Biota of Virginia. Refer to the methods sections for a discussion of database sources.

**VFWIS observation within Study Area?:** After reviewing the VFWIS map of the species collection location (Figure 4 for example), a determination was made if that location fell within the JI400PA. An A (Adjacent) indicates if it is next to, or partly within the JI400PA, N (No) indicates it is outside the JI400PA, and Y (Yes) indicates it is contained within the JI400PA.

**DCR-DNH Observations:** Based on field observations of DCR-DNH staff. JI = Jamestown Island and surrounding marshes, NOL = Neck O Land, adjacent uplands and marshes.

**Swihart et al. 1991:** Collections from the Back River (BR) system including Sandy Bay, Back River, The Thorofare, Piping Point Creek, Back River Marsh Creek, Kingsmill Creek, Harman's Creek, Black Point Creek and Passamore Creek as given in Swihart et al. (1991).

Family	Scientific Name	Common Name	Federal/State Status	Tracked by DCR-DNH	VFWIS confirmed	VFWIS Database Source	VFWIS observation within study area? DCR-DNH Observations	Swihart et al. 1991
Achiridae	<i>Trinectes maculatus</i>	Hogchoker		Yes	COLLECTIONS(1996)		N	BR
Acipenseridae	<i>Acipenser oxyrinchus</i>	Atlantic sturgeon	SS	Y	Yes	COLLECTIONS(1997),BOVA	A	
Amiidae	<i>Amia calva</i>	Bowfin			Yes	COLLECTIONS(1996),BOVA	A	BR

Anguillidae	<i>Anguilla rostrata</i>	American eel	Yes	COLLECTIONS(1996),BOVA	Y	BR
Aphredoderidae	<i>Aphredoderus sayanus</i> - L	Pirate perch	No	BOVA		
Atherinidae	<i>Membras martinica</i>	Rough silverside	Yes	COLLECTIONS(1996)	N	
Atherinidae	<i>Menidia beryllina</i>	Inland silverside	Yes	COLLECTIONS(1996)	A	BR
Catostomidae	<i>Erimyzon oblongus</i>	Creek chubsucker	Yes	COLLECTIONS(1972),BOVA	N	BR
Catostomidae	<i>Erimyzon suetta</i> - N	Lake chubsucker	Y	No BOVA		
Catostomidae	<i>Moxostoma macrolepidotum</i>	Shorthead redhorse	Yes	COLLECTIONS(1970),BOVA	A	
Centrarchidae	<i>Acantharchus pomotis</i> - N	Mud sunfish	No	BOVA		
Centrarchidae	<i>Centrarchus macropterus</i>	Flier	Yes	COLLECTIONS(1970)	A	
Centrarchidae	<i>Enneacanthus chaetodon</i> - N	Blackbanded sunfish	SS	Y	No BOVA	
Centrarchidae	<i>Enneacanthus gloriosus</i>	Bluespotted sunfish	Yes	COLLECTIONS(1971),BOVA	A	
Centrarchidae	<i>Lepomis auritus</i>	Redbreast sunfish	Yes	COLLECTIONS(1971),BOVA	A	BR
Centrarchidae	<i>Lepomis gibbosus</i>	Pumpkinseed	Yes	COLLECTIONS(1996),BOVA	Y	BR
Centrarchidae	<i>Lepomis gulosus</i>	Warmouth	Yes	COLLECTIONS(1971),BOVA	N	BR
Centrarchidae	<i>Lepomis macrochirus</i>	Bluegill	Yes	COLLECTIONS(1996),BOVA	A	BR
Centrarchidae	<i>Lepomis microlophus</i>	Redear sunfish	Yes	COLLECTIONS(1972),BOVA	N	BR
Centrarchidae	<i>Micropterus dolomieu</i>	Smallmouth bass	Yes	COLLECTIONS(1970),BOVA	A	
Centrarchidae	<i>Micropterus salmoides</i>	Largemouth bass	Yes	COLLECTIONS(1995),BOVA	A	BR
Centrarchidae	<i>Pomoxis nigromaculatus</i>	Black crappie	Yes	COLLECTIONS(1975),BOVA	A	
Clupeidae	<i>Alosa aestivalis</i>	Blueback herring	Yes	COLLECTIONS(1978),BOVA	A	
Clupeidae	<i>Alosa mediocris</i>	Hickory shad	Yes	COLLECTIONS(1970),BOVA	A	
Clupeidae	<i>Alosa pseudoharengus</i>	Alewife	Yes	COLLECTIONS(1970),BOVA	A	
Clupeidae	<i>Alosa sapidissima</i>	American shad	Yes	COLLECTIONS(1970),BOVA	A	
Clupeidae	<i>Brevoortia tyrannus</i>	Atlantic menhaden	Yes	COLLECTIONS(1996)	A	BR
Clupeidae	<i>Dorosoma cepedianum</i>	Gizzard shad	Yes	COLLECTIONS(1996),BOVA	Y	BR
Clupeidae	<i>Dorosoma petenense</i>	Threadfin shad	Yes	COLLECTIONS(1995),BOVA	A	BR
Cyprinidae	<i>Cyprinella analostamas</i>	Satinfin shiner	Yes	COLLECTIONS(1975),BOVA	A	
Cyprinidae	<i>Cyprinus carpio</i>	Common carp	Yes	COLLECTIONS(1970),BOVA	Y	BR
Cyprinidae	<i>Hybognathus regius</i>	Eastern silvery minnow	Yes	COLLECTIONS(1996),BOVA	Y	
Cyprinidae	<i>Luxilus cornutus</i>	Common shiner	Yes	COLLECTIONS(1970),BOVA	A	

Cyprinidae	<i>Notemigonus crysoleucas</i>	Golden shiner		Yes	COLLECTIONS(1996),BOVA	Y	BR
Cyprinidae	<i>Notropis bifrenatus</i>	Bridle shiner	SS	Y	Yes COLLECTIONS(1970),BOVA	A	
Cyprinidae	<i>Notropis hudsonius</i>	Spottail shiner		Yes	COLLECTIONS(1996),BOVA	Y	BR
Cyprinidae	<i>Notropis procne</i>	Swallowtail shiner		Yes	COLLECTIONS(1970),BOVA	A	
Cyprinidae	<i>Semotilus atromaculatus</i>	Creek chub		Yes	COLLECTIONS(1970),BOVA	A	
Engraulidae	<i>Anchoa mitchilli</i>	Bay anchovy		Yes	COLLECTIONS(1996)	A	BR
Esocidae	<i>Esox americanus americanus</i>	Redfin pickerel		Yes	COLLECTIONS(1970),BOVA	A	
Esocidae	<i>Esox niger</i>	Chain pickerel		Yes	COLLECTIONS(1975),BOVA	A	
Fundulidae	<i>Fundulus confluentus</i>	Marsh killifish		Yes	COLLECTIONS(1970),BOVA	A	
Fundulidae	<i>Fundulus diaphanus</i>	Banded killifish		Yes	COLLECTIONS(1970),BOVA	Y	BR
Fundulidae	<i>Fundulus heteroclitus</i>	Mummichog		Yes	COLLECTIONS(1996)	A	JI BR
Gasterosteidae	<i>Gasterosteus aculeatus</i>	Threespine stickleback		Yes	COLLECTIONS(1970),BOVA	A	
Gobidae	<i>Gobiosoma bosc</i>	Naked goby					BR
Ictaluridae	<i>Ameiurus catus</i>	White catfish		Yes	COLLECTIONS(1996),BOVA	Y	
Ictaluridae	<i>Ameiurus natalis</i>	Yellow bullhead		Yes	COLLECTIONS(1972),BOVA	N	BR
Ictaluridae	<i>Ameiurus nebulosus</i>	Brown bullhead		Yes	COLLECTIONS(1996),BOVA	A	BR
Ictaluridae	<i>Ictalurus furcatus</i>	Blue catfish		Yes	COLLECTIONS(1996)	N	BR
Ictaluridae	<i>Ictalurus punctatus</i>	Channel catfish		Yes	COLLECTIONS(1996),BOVA	Y	BR
Ictaluridae	<i>Noturus gyrinus</i>	Tadpole madtom		Yes	COLLECTIONS(1945),BOVA	N	
Ictaluridae	<i>Noturus insignis</i> - N	Margined madtom		No	BOVA		
Lepisosteidae	<i>Lepisosteus osseus</i>	Longnose gar		Yes	COLLECTIONS(1970),BOVA	A	
Moronidae	<i>Morone americana</i>	White perch		Yes	COLLECTIONS(1996),BOVA	A	BR
Moronidae	<i>Morone chrysops</i> - N	White bass		No	BOVA		
Moronidae	<i>Morone saxatilis</i>	Striped bass		Yes	COLLECTIONS(1996),BOVA	A	BR
Mugilidae	<i>Mugil cephalus</i>	Striped mullet		Yes	COLLECTIONS(1995)	N	
Mugilidae	<i>Mugil curema</i>	White mullet					BR
Paralichthyidae	<i>Paralichthys dentatus</i>	Summer flounder					BR
Percidae	<i>Etheostoma fusiforme</i> - N	Swamp darter		No	BOVA		
Percidae	<i>Etheostoma olmstedi</i>	Tessellated darter		Yes	COLLECTIONS(1970),BOVA	A	BR
Percidae	<i>Perca flavescens</i>	Yellow perch		Yes	COLLECTIONS(1970),BOVA	A	BR

Petromyzontidae	<i>Lampetra aepyptera</i>	Least brook lamprey	W Yes	COLLECTIONS(1958)	N
Petromyzontidae	<i>Petromyzon marinus</i>	Sea lamprey	Yes	COLLECTIONS(1970)	A
Poeciliidae	<i>Gambusia holbrooki</i>	Eastern mosquitofish	Yes	COLLECTIONS(1970),BOVA	Y JI
Salmonidae	<i>Oncorhynchus mykiss</i>	Rainbow trout	Yes	COLLECTIONS(1970),BOVA	A
Sciaenidae	<i>Bairdiella chrysoura</i>	Silver perch	Yes	COLLECTIONS(1995)	N
Sciaenidae	<i>Leiostomus xanthurus</i>	Spot	Yes	COLLECTIONS(1995)	A BR
Sciaenidae	<i>Micropogonias undulatus</i>	Atlantic croaker	Yes	COLLECTIONS(1995)	N BR
Syngnathidae	<i>Syngnathus fuscus</i>	Northern pipefish			BR
Umbridae	<i>Umbra pygmaea</i>	Eastern mudminnow	Yes	COLLECTIONS(1970),BOVA	A JI

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**DCR-DNH Observations:** Based on field observations of DCR-DNH staff. JI = Jamestown Island and surrounding marshes, NOL = Neck O Land, adjacent uplands and marshes.

**Mitchell, 2002:** JI - Jamestown Island, NOL = Neck O Land/mainland as reported by Mitchell (2002).

Family	Scientific Name	Common Name	Federal/State Status	Tracked by DCR-DNH	VFWIS confirmed	VFWIS Database Source	VFWIS observation within study area?	DCR-DNH Observations	Mitchell, 2002
<b>FROGS AND TOADS:</b>									
Bufonidae	<i>Bufo americanus</i>	American toad			Yes	COLLECTIONS,BOVA	Y	NOL	
Bufonidae	<i>Bufo fowleri</i>	Fowler's toad			Yes	COLLECTIONS,BOVA	Y	JI, NOL	
Bufonidae	<i>Bufo quercicus</i> - U	Oak toad	SS	Y	No	BOVA			
Bufonidae	<i>Bufo terrestris</i> - U	Southern toad			No	BOVA			
Hylidae	<i>Acris crepitans</i>	Northern cricket frog			Yes	COLLECTIONS,BOVA	A		
Hylidae	<i>Acris grylli</i> - U	Southern cricket frog			No	BOVA			
Hylidae	<i>Hyla chrysoscelis</i>	Cope's gray treefrog			Yes	COLLECTIONS,BOVA	Y	JI, NOL	
Hylidae	<i>Hyla cinerea</i>	Green treefrog			Yes	COLLECTIONS,BOVA	Y	JI	JI, NOL
Hylidae	<i>Hyla femoralis</i> - L	Pine woods treefrog			No	BOVA			
Hylidae	<i>Hyla gratiosa</i> - U	Barking treefrog	ST	Y	No	BOVA			
Hylidae	<i>Hyla squirella</i>	Squirrel treefrog			No	BOVA		JI	JI, NOL
Hylidae	<i>Hyla versicolor</i> - N	Gray treefrog							
Hylidae	<i>Pseudacris brimleyi</i> - L	Brimley's chorus frog			No	BOVA			
Hylidae	<i>Pseudacris crucifer</i>	Northern spring peeper			Yes	COLLECTIONS,BOVA	Y		JI
Hylidae	<i>Pseudacris feriarum</i> - L	Southeastern chorus frog			Yes	COLLECTIONS,BOVA	A		

Hylidae	<i>Pseudacris ocularis</i> - N	Little grass frog	W	No	BOVA		
Microhylidae	<i>Gastrophryne carolinensis</i>	Eastern narrow-mouthed toad		Yes	COLLECTIONS,BOVA	Y	JI, NOL
Pelobatidae	<i>Scaphiopus holbrookii</i>	Eastern spadefoot		Yes	COLLECTIONS,BOVA	Y	NOL
Ranidae	<i>Rana catesbeiana</i>	Bullfrog		No	BOVA		JI JI
Ranidae	<i>Rana clamitans</i>	Green frog		Yes	COLLECTIONS,BOVA	Y	JI
Ranidae	<i>Rana palustris</i> - L	Pickerel frog		Yes	COLLECTIONS,BOVA	A	
Ranidae	<i>Rana sphenocephala</i>	Southern leopard frog		Yes	COLLECTIONS,BOVA	Y	JI, NOL
Ranidae	<i>Rana virgatipes</i> - U	Carpenter Frog	SS	W			

#### SALAMANDERS:

Ambystomatidae	<i>Ambystoma mabeei</i> - L	Mabee's salamander	ST	Y	No	BOVA		
Ambystomatidae	<i>Ambystoma maculatum</i>	Spotted salamander		Yes	COLLECTIONS,BOVA	Y		JI, NOL
Ambystomatidae	<i>Ambystoma opacum</i>	Marbled salamander		Yes	COLLECTIONS,BOVA	A	JI	JI, NOL
Ambystomatidae	<i>Ambystoma tigrinum</i> - U	Tiger salamander						
Amphiumidae	<i>Amphiuma means</i>	Two-toed amphiuma		No	BOVA			JI
Plethodontidae	<i>Desmognathus auriculatus</i> - U	Southern dusky salamander		No	BOVA			
Plethodontidae	<i>Desmognathus fuscus</i>	Northern dusky salamander		Yes	COLLECTIONS,BOVA	Y		
Plethodontidae	<i>Eurycea bislineata</i> - N	Northern two-lined salamander						
Plethodontidae	<i>Eurycea cirrigera</i>	Southern two-lined salamander		Yes	COLLECTIONS,BOVA	Y		
Plethodontidae	<i>Eurycea guttolineata</i>	Three-lined salamander		Yes	COLLECTIONS,BOVA	Y		
Plethodontidae	<i>Eurycea longicauda</i> - N	Long-tailed salamander						
Plethodontidae	<i>Hemidactylum scutatum</i>	Four-toed salamander		Yes	COLLECTIONS,BOVA	A		JI
Plethodontidae	<i>Plethodon chlorobryonis</i>	Atlantic Coast Slimy salamander		Yes	COLLECTIONS,BOVA	Y	NOL	JI
Plethodontidae	<i>Plethodon cinereus</i>	Northern red-backed salamander		Yes	COLLECTIONS,BOVA	Y		NOL
Plethodontidae	<i>Plethodon glutinosus</i> - N	Northern slimy salamander						
Plethodontidae	<i>Pseudotriton montanus</i>	Eastern mud salamander		Yes	COLLECTIONS,BOVA	Y		
Plethodontidae	<i>Pseudotriton ruber ruber</i>	Northern red salamander		Yes	COLLECTIONS,BOVA	N		

Plethodontidae	<i>Stereochilus marginatus</i> - U	Many-lined salamander	W	No	BOVA			
Proteidae	<i>Necturus punctatus</i> - U	Dwarf waterdog						
Salamandridae	<i>Notophthalmus viridescens</i>	Red-spotted newt	Yes	COLLECTIONS,BOVA		Y	JI	JI, NOL
Sirenidae	<i>Siren lacertina</i> - U	Greater siren	No	BOVA				

**Table 4. Reptiles reported from the Jamestown Island 400 Project Area.**

**Scientific Name** - Bold face type indicates the species is reported by NPSpecies. If the presence of that species is corroborated by collections or observations from other listed sources, no further comment on its presence is indicated. If not supported by other databases, then the probability of its occurrence is indicated by N = No, U = Unlikely, and L = Likely. These are based on range maps (Mitchell and Reay, 1999) and the expertise of DCR-DNH staff.

**Federal/State Status:** Reflects the legal status of the species at the federal and state level. FE = federal endangered, FT = federal threatened, FS = federal species of concern, SE = state endangered, ST = state threatened, SS = state species of concern. Note: 'Species of concern' is not a legal designation. Status ranks were taken from VFWIS.

**Tracked by DCR-DNH:** 'Y' indicates that species is tracked as rare, threatened or endangered by DCR-DNH (Roble 2001). 'W' indicates it is on the VDCRDNH watchlist. Neither designation indicates the presence or absence of the species in the JI400PA.

**VFWIS Confirmed:** Presence of species is confirmed within the search area (Figure 3) based on the database source. Refer to the methods section for a discussion of interpretation limitations.

**VFWIS Database Source:** BOVA = Biota of Virginia. Refer to the methods sections for a discussion of database sources.

**VFWIS observation within Study Area?**: After reviewing the VFWIS map of the species collection location (Figure 4 for example), a determination was made if that location fell within the JI400PA. An A (Adjacent) indicates if it is next to, or partly within the study area, N (No) indicates it is outside the study area, and Y (Yes) indicates it is contained within the study area. A '?' indicates the point was plotted in inappropriate habitat (e.g., a terrestrial animal reported from the middle of a river) and its exact location could not be determined.

**DCR-DNH Observations:** Based on field observations of DCR-DNH staff. JI = Jamestown Island and surrounding marshes, NOL = Neck O Land, adjacent uplands and marshes.

**Mitchell, 2002:** JI - Jamestown Island, NOL = Neck O Land/mainland as reported by Mitchell (2002).

Family	Scientific Name	Common Name	Federal/State Status Tracked by DCR-DNH	VFWIS Database Source	VDGIF observation within study area?	DCR-DNH Observations	Mitchell, 2002
LIZARDS:							
Anguidae	<b><i>Ophisaurus attenuatus</i></b> - U	Slender glass lizard	No	BOVA			
Phrynosomatidae	<b><i>Sceloporus undulatus</i></b>	Fence lizard	Yes	COLLECTIONS,BOVA	Y		
Scincidae	<b><i>Eumeces fasciatus</i></b>	Five-lined skink	Yes	COLLECTIONS,BOVA	?	JI, NOL	

Scincidae	<i>Eumeces inexpectatus</i> - L	Southeastern five-lined skink	No BOVA			
Scincidae	<i>Eumeces laticeps</i>	Broadhead skink	Yes COLLECTIONS,BOVA	Y	JI, NOL	
Scincidae	<i>Scincella lateralis</i>	Little brown skink	Yes COLLECTIONS,BOVA	Y	NOL	
Teiidae	<i>Cnemidophorus sexlineatus</i>	Six-lined racerunner	Yes COLLECTIONS,BOVA	Y	JI	

SNAKES:

Colubridae	<i>Carpophis amoenus amoenus</i>	Eastern worm snake	Yes COLLECTIONS,BOVA	JI, NOL		
Colubridae	<i>Cemophora coccinea copei</i> - L	Northern scarlet snake	No BOVA			
Colubridae	<i>Coluber constrictor constrictor</i>	Northern black racer	Yes COLLECTIONS,BOVA	Y	JI	JI, NOL
Colubridae	<i>Diadophis punctatus edwardsii</i>	Northern ringneck snake	Yes COLLECTIONS,BOVA	A	JI	JI, NOL
Colubridae	<i>Diadophis punctatus punctatus</i>	Southern ringneck snake	Yes COLLECTIONS,BOVA	Y		
Colubridae	<i>Elaphe guttata</i> - L	Corn snake	No BOVA			
Colubridae	<i>Elaphe obsoleta obsoleta</i>	Black rat snake	Yes COLLECTIONS,BOVA	Y	NOL	JI, NOL
Colubridae	<i>Farancia abacura abacura</i> - L	Eastern mud snake	No BOVA			
Colubridae	<i>Farancia erytrogramma erytrogramma</i>	Rainbow snake	W Yes COLLECTIONS,BOVA	Y		
Colubridae	<i>Heterodon platirhinos</i>	Eastern hognose snake	Yes COLLECTIONS,BOVA	?		
Colubridae	<i>Lampropeltis calligaster rhombomaculata</i>	Mole kingsnake	Yes COLLECTIONS,BOVA	Y		
Colubridae	<i>Lampropeltis getula getula</i>	Eastern kingsnake	Yes COLLECTIONS,BOVA	Y		
Colubridae	<i>Lampropeltis triangulum triangulum</i> - U	Eastern milk snake	No BOVA			
Colubridae	<i>Nerodia erythrogaster erythrogaster</i> - L	Red-bellied water snake	No BOVA			
Colubridae	<i>Nerodia sipedon sipedon</i>	Northern water snake	Yes COLLECTIONS,BOVA	Y	JI	JI
Colubridae	<i>Nerodia taxispilota</i>	Brown water snake	Yes COLLECTIONS,BOVA	Y		

Colubridae	<b><i>Opheodrys aestivus aestivus</i></b>	Rough green snake	Yes	COLLECTIONS,BOVA	N	JI
Colubridae	<i>Regina rigida rigida</i> - U	Glossy crayfish snake	Y	No BOVA		
Colubridae	<b><i>Storeria dekayi dekayi</i></b>	Northern brown snake	Yes	COLLECTIONS,BOVA	Y	JI, NOL
Colubridae	<b><i>Storeria occipitomaculata occipitomaculata</i> - L</b>	Northern red-bellied snake	No	BOVA		
Colubridae	<b><i>Thamnophis sauritus sauritus</i> - L</b>	Eastern ribbon snake	No	BOVA		
Colubridae	<b><i>Thamnophis sirtalis sirtalis</i></b>	Eastern garter snake	No	BOVA		NOL
Colubridae	<b><i>Virginia striatula</i></b>	Rough earth snake	Yes	COLLECTIONS,BOVA	A	
Colubridae	<b><i>Virginia valeriae valeriae</i></b>	Eastern smooth earth snake	Yes	COLLECTIONS,BOVA	Y	
Viperidae	<b><i>Agkistrodon contortrix mokasen</i></b>	Northern copperhead	Yes	COLLECTIONS,BOVA	A	
Viperidae	<b><i>Agkistrodon piscivorus piscivorus</i> - U</b>	Eastern cottonmouth	No	BOVA		

TURTLES:

Cheloniidae	<b><i>Caretta caretta</i> - U</b>	Loggerhead sea turtle				
Cheloniidae	<b><i>Lepidochelys kempii</i> - U</b>	Kemp's Ridley sea turtle				
Chelydridae	<b><i>Chelydra serpentina</i></b>	Snapping turtle	No	BOVA	JI, NOL	JI, NOL
Dermochelyidae	<b><i>Dermochelys coriacea</i> - U</b>	Leatherback sea turtle				
Emydidae	<b><i>Chrysemys picta</i></b>	Painted turtle	No	BOVA	JI	JI, NOL
Emydidae	<b><i>Clemmys guttata</i></b>	Spotted turtle	No	BOVA		JI
Emydidae	<b><i>Malaclemys terrapin</i></b>	Northern diamond-backed terrapin	W	No BOVA		JI, NOL
Emydidae	<b><i>Pseudemys concinna</i> - U</b>	River cooter				
Emydidae	<b><i>Pseudemys rubriventris</i></b>	Northern red-bellied cooter	No	BOVA	JI	JI, NOL
Emydidae	<b><i>Sternotherus odoratus</i> - L</b>	Eastern musk (= stinkpot) turtle	No	BOVA		

Emydidae	<b><i>Terrapene carolina</i></b>	Eastern box turtle	Yes COLLECTIONS,BOVA	Y	JI, NOL	JI, NOL
Emydidae	<b><i>Trachemys scripta</i> - L</b>	Common slider	No BOVA			
Kinosternidae	<b><i>Kinosternon baurii</i></b>	Striped mud turtle	Yes COLLECTIONS,BOVA	?		
Kinosternidae	<b><i>Kinosternon subrubrum</i></b>	Eastern mud turtle	No BOVA		JI	JI, NOL

**Table 5. Birds reported from the Jamestown Island 400 Project Area.**

**Scientific Name** - Bold face type indicates the species is reported by NPSpecies. If the presence of that species is corroborated by collections or observations from other listed sources, no further comment on its presence is indicated. If not supported by other databases, then the probability of its occurrence is indicated by N = No, U = Unlikely, and L = Likely. These are based on Watts (2001) and the expertise of DCR-DNH staff.

**Federal/State Status:** Reflects the legal status of the species at the federal and state level. FE = federal endangered, FT = federal threatened, FS = federal species of concern, SE = state endangered, ST = state threatened, SS = state species of concern. Note: 'Species of concern' is not a legal designation. Status ranks were taken from VFWIS.

**Tracked by DCR-DNH:** 'B' indicates that a breeding occurrence of the species is tracked as rare, threatened or endangered by DCR-DNH (Roble 2001). 'W' indicates that a breeding occurrence of the species is on the DCR-DNH watchlist. Non-breeding occurrences are not usually tracked, however a few exceptions are indicated by 'NB'. None of these designations indicates the presence or absence of the species in the JI400PA.

**VFWIS Confirmed:** Presence of species is confirmed within the search area (Figure 3) based on the database source. Refer to the methods section for a discussion of interpretation limitations.

**VFWIS Database Source:** BBA = Breeding Bird Atlas, BBS = Breeding Bird Survey, BOVA = Biota of Virginia, CBC = Christmas Bird Count. Refer to the methods sections for a discussion of database sources.

**DCR-DNH Observations:** Based on field observations of DCR-DNH staff. Observations do not imply breeding activity. JI = Jamestown Island and surrounding marshes, NOL = Neck O Land, adjacent uplands and marshes.

**Watts, 2001:** The breeding status of birds on JI400PA is indicated as N = No, U = Unlikely, L = Likely, and Y = Yes as indicated by Watts (2001).

Family	Scientific Name	Common Name	Federal/State Status	Tracked By DCR-DNH	VFWIS confirmed	DCR-DNH Observations	Watts, 2001
Accipitridae	<b><i>Accipiter cooperii</i></b>	Cooper's hawk	B	Yes	BBS(1994),BBA(1984),BOVA,CBC(1990)		U
Accipitridae	<b><i>Accipiter striatus</i></b>	Sharp-shinned hawk		Yes	BBA(1986),BOVA,CBC(1990)		U
Accipitridae	<b><i>Buteo jamaicensis</i></b>	Red-tailed hawk		Yes	BBS(1997),BBA(1984),BOVA,CBC(1990)	JI	L
Accipitridae	<b><i>Buteo lagopus</i></b> - N	Rough-legged	No	BOVA			

		hawk				
Accipitridae	<i>Buteo lineatus</i>	Red-shouldered hawk	Yes	BBS(1999),BBA(1986),BOVA,CBC(1990)		Y
Accipitridae	<i>Buteo platypterus</i> - L	Broad-winged hawk	No	BOVA		U
Accipitridae	<i>Circus cyaneus</i>	Northern harrier	SS	B	Yes BBA(1986),BOVA,CBC(1990)	N
Accipitridae	<i>Haliaeetus leucocephalus</i>	Bald eagle	FT	B	Yes BBS(1999),BBA(1986),COLLECTIONS(2001),BOVA,CBC(1989)	JI, NOL
Accipitridae	<i>Pandion haliaetus</i>	Osprey			Yes BBS(1998),BBA(1988),BOVA	JI, NOL
Alaudidae	<i>Eremophila alpestris</i>	Horned lark			Yes BOVA,CBC(1990)	N
Alcedinidae	<i>Ceryle alcyon</i>	Belted kingfisher			Yes BBS(1999),BBA(1986),BOVA,CBC(1988)	JI, NOL
Anatidae	<i>Aix sponsa</i>	Wood duck			Yes BBS(1997),BBA(1986),BOVA,CBC(1990)	JI
Anatidae	<i>Anas acuta</i>	Northern pintail			Yes BOVA,CBC(1990)	N
Anatidae	<i>Anas americana</i>	American wigeon			Yes BOVA,CBC(1990)	N
Anatidae	<i>Anas clypeata</i>	Northern shoveler			Yes BOVA,CBC(1990)	N
Anatidae	<i>Anas crecca</i>	Green-winged teal			Yes BOVA,CBC(1990)	
Anatidae	<i>Anas discors</i> - L	Blue-winged teal	B, NB	-		N
Anatidae	<i>Anas penelope</i> - U	Eurasian wigeon			No BOVA	
Anatidae	<i>Anas platyrhynchos</i>	Mallard			Yes BBS(1994),BBA(1986),BOVA,CBC(1990)	NOL
Anatidae	<i>Anas rubripes</i>	American black duck			Yes BBA(1986),BOVA,CBC(1990)	N
Anatidae	<i>Anas strepera</i>	Gadwall	B		Yes BOVA,CBC(1990)	N
Anatidae	<i>Anser albifrons</i>	Greater white-fronted goose			Yes CBC(1982)	

Anatidae	<b><i>Aythya affinis</i></b>	Lesser scaup	Yes BOVA,CBC(1990)	N
Anatidae	<b><i>Aythya americana</i></b>	Redhead	Yes BOVA,CBC(1990)	N
Anatidae	<b><i>Aythya collaris</i></b>	Ring-necked duck	Yes CBC(1990)	N
Anatidae	<b><i>Aythya marila</i></b>	Greater scaup	Yes BOVA,CBC(1987)	N
Anatidae	<b><i>Aythya valisineria</i></b>	Canvasback	Yes BOVA,CBC(1988)	N
Anatidae	<b><i>Branta canadensis</i></b>	Canada goose	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, Y NOL
Anatidae	<b><i>Bucephala albeola</i></b>	Bufflehead	Yes BOVA,CBC(1990)	N
Anatidae	<b><i>Bucephala clangula</i></b> - U	Common goldeneye	Yes BOVA,CBC(1990)	
Anatidae	<b><i>Chen caerulescens</i></b>	Snow goose	Yes BOVA,CBC(1990)	
Anatidae	<b><i>Clangula hyemalis</i></b>	Oldsquaw	Yes BOVA,CBC(1986)	
Anatidae	<b><i>Cygnus columbianus</i></b>	Tundra swan	Yes BOVA,CBC(1990)	
Anatidae	<b><i>Cygnus olor</i></b>	Mute swan	Yes CBC(1990)	
Anatidae	<b><i>Dendrocygna bicolor</i></b>	Fulvous - N whistling-duck	No BOVA	
Anatidae	<b><i>Lophodytes cucullatus</i></b>	Hooded merganser	Yes BOVA,CBC(1990)	U
Anatidae	<b><i>Melanitta nigra</i></b> - N	Black scoter		
Anatidae	<b><i>Melanitta perspicillata</i></b> - N	Surf scoter		
Anatidae	<b><i>Mergus merganser</i></b>	Common merganser	B Yes BOVA,CBC(1990)	N
Anatidae	<b><i>Mergus serrator</i></b>	Red-breasted merganser	Yes BOVA,CBC(1989)	N
Anatidae	<b><i>Oxyura jamaicensis</i></b>	Ruddy duck	Yes BOVA,CBC(1990)	N
Apodidae	<b><i>Chaetura pelasgica</i></b>	Chimney swift	Yes BBS(1999),BBA(1986),BOVA	L
Ardeidae	<b><i>Ardea alba</i></b>	Great egret	SS B Yes BBS(1998),BBA(1988),BOVA,CBC(1990)	L

Ardeidae	<b><i>Ardea herodias</i></b>	Great blue heron	W Yes BBS(1999),BBA(1989),COLLECTIONS,CWB(1993),BOVA	JI, Y NOL
Ardeidae	<b><i>Botaurus lentiginosus</i> - L</b>	American bittern	B, No BOVA NB	U
Ardeidae	<b><i>Bubulcus ibis</i></b>	Cattle egret	Yes BBA(1984),BOVA	N
Ardeidae	<b><i>Butorides virescens</i></b>	Green heron	Yes BBS(1999),BBA(1986),BOVA,CBC(1988)	JI L
Ardeidae	<b><i>Egretta caerulea</i> - L</b> Little blue heron	Little blue heron	B No BOVA	N
Ardeidae	<b><i>Egretta thula</i></b>	Snowy egret	B Yes BBA(1986),BOVA	N
Ardeidae	<b><i>Egretta tricolor</i> - N</b>	Tricolored heron	B No BOVA	
Ardeidae	<b><i>Ixobrychus exilis</i></b>	Least bittern	W Yes BBA(1986),BOVA	JI L
Ardeidae	<b><i>Nyctanassa violacea</i> - U</b>	Yellow-crowned night-heron	B No BOVA	
Ardeidae	<b><i>Nycticorax nycticorax</i></b>	Black-crowned night-heron	B Yes BBA(1984),BOVA,CBC(1989)	N
Bombycillidae	<b><i>Bombycilla cedrorum</i></b>	Cedar waxwing	Yes BBS(1999),BBA(1984),BOVA,CBC(1990)	N
Caprimulgidae	<b><i>Caprimulgus carolinensis</i></b>	Chuck-will's-widow	Yes BBS(1999),BBA(1984),BOVA	L
Caprimulgidae	<b><i>Caprimulgus vociferus</i></b>	Whip-poor-will	Yes BBS(1999),BBA(1984),BOVA	L
Caprimulgidae	<b><i>Chordeiles minor</i> - L</b>	Common nighthawk	No BOVA	U
Cardinalidae	<b><i>Cardinalis cardinalis</i></b>	Northern cardinal	Yes BBS(1999),BBA(1988),BOVA,CBC(1990)	JI, Y NOL
Cardinalidae	<b><i>Guiraca caerulea</i></b>	Blue grosbeak	Yes BBS(1999),BBA(1986),BOVA	JI U
Cardinalidae	<b><i>Passerina cyanea</i></b>	Indigo bunting	Yes BBS(1999),BBA(1986),BOVA	JI, Y NOL
Cardinalidae	<b><i>Pheucticus ludovicianus</i> - L</b>	Rose-breasted grosbeak	-	N
Cardinalidae	<b><i>Spiza americana</i> - L</b>	Dickcissel	W No BOVA	

Cathartidae	<b><i>Cathartes aura</i></b>	Turkey vulture	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, NOL	U
Cathartidae	<b><i>Coragyps atratus</i></b>	Black vulture	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)		L
Certhiidae	<b><i>Certhia americana</i></b>	Brown creeper	B Yes BOVA,CBC(1990)		N
Charadriidae	<b><i>Charadrius semipalmatus</i> - L</b>	Semipalmated plover	-		N
Charadriidae	<b><i>Charadrius vociferus</i></b>	Killdeer	Yes BBS(1999),BBA(1986),BOVA,CBC(1988)	JI	Y
Charadriidae	<b><i>Pluvialis squatarola</i> - N</b>	Black-bellied plover			
Ciconiidae	<b><i>Mycteria americana</i></b> - N	Wood stork	No BOVA		
Columbidae	<b><i>Columba livia</i></b>	Rock dove	Yes BBS(1998),BBA(1986),BOVA,CBC(1990)	JI	L
Columbidae	<b><i>Zenaida macroura</i></b>	Mourning dove	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, NOL	Y
Corvidae	<b><i>Corvus brachyrhynchos</i></b>	American crow	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI	Y
Corvidae	<b><i>Corvus ossifragus</i></b>	Fish crow	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, NOL	Y
Corvidae	<b><i>Cyanocitta cristata</i></b>	Blue jay	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, NOL	Y
Cuculidae	<b><i>Coccyzus americanus</i></b>	Yellow-billed cuckoo	Yes BBS(1999),BBA(1986),BOVA	JI, NOL	Y
Cuculidae	<b><i>Coccyzus erythrophthalmus</i></b>	Black-billed cuckoo	Yes BBS(1997),BOVA		U
Emberizidae	<b><i>Ammodramus caudacutus</i> - U</b>	Sharp-tailed sparrow			
Emberizidae	<b><i>Ammodramus maritimus</i> - U</b>	Seaside sparrow			
Emberizidae	<b><i>Ammodramus savannarum</i></b>	Grasshopper sparrow	Yes BBS(1999),BOVA		N

Emberizidae	<i>Junco hyemalis</i>	Dark-eyed junco	Yes BOVA,CBC(1990)	N
Emberizidae	<i>Melospiza georgiana</i>	Swamp sparrow	B Yes BOVA,CBC(1990)	N
Emberizidae	<i>Melospiza lincolni</i> - L	Lincoln's sparrow	-	N
Emberizidae	<i>Melospiza melodia</i>	Song sparrow	Yes BBS(1997),BBA(1988),BOVA,CBC(1990)	Y
Emberizidae	<i>Passerculus sandwichensis</i>	Savannah sparrow	Yes BBS(1997),BOVA,CBC(1988)	N
Emberizidae	<i>Passerella iliaca</i>	Fox sparrow	Yes BOVA,CBC(1990)	N
Emberizidae	<i>Pipilo erythrophthalmus</i>	Eastern towhee	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, NOL Y
Emberizidae	<i>Plectrophenax nivalis</i>	Snow bunting	Yes BOVA,CBC(1988)	
Emberizidae	<i>Pooecetes gramineus</i>	Vesper sparrow	Yes BOVA,CBC(1988)	N
Emberizidae	<i>Spizella arborea</i>	American tree sparrow	Yes CBC(1990)	N
Emberizidae	<i>Spizella passerina</i>	Chipping sparrow	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, NOL Y
Emberizidae	<i>Spizella pusilla</i>	Field sparrow	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	Y
Emberizidae	<i>Zonotrichia albicollis</i>	White-throated sparrow	Yes BOVA,CBC(1989)	JI N
Emberizidae	<i>Zonotrichia leucophrys</i>	White-crowned sparrow	Yes BOVA,CBC(1990)	N
Falconidae	<i>Falco columbarius</i>	Merlin	Yes CBC(1983)	N
Falconidae	<i>Falco peregrinus</i>	Peregrine falcon	ST B Yes BOVA,CBC(1984)	N
Falconidae	<i>Falco sparverius</i>	American kestrel	Yes BBS(1994),BOVA,CBC(1990)	U
Fringillidae	<i>Agelaius phoeniceus</i>	Red-winged blackbird	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, NOL Y
Fringillidae	<i>Carduelis flammea</i> - U	Common redpoll		
Fringillidae	<i>Carduelis pinus</i>	Pine siskin	Yes BOVA,CBC(1990)	N

Fringillidae	<i>Carduelis tristis</i>	American goldfinch	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI	Y
Fringillidae	<i>Carpodacus mexicanus</i>	House finch	Yes BBS(1999),BOVA,CBC(1990)	JI	Y
Fringillidae	<i>Carpodacus purpureus</i>	Purple finch	SS B Yes BOVA,CBC(1990)		N
Fringillidae	<i>Coccothraustes vespertinus</i>	Evening grosbeak	Yes BOVA,CBC(1990)		N
Fringillidae	<i>Loxia curvirostra</i> - U	Red crossbill	B -		N
Fringillidae	<i>Loxia leucoptera</i> - N	White-winged crossbill	No BOVA		
Gaviidae	<i>Gavia immer</i>	Common loon	Yes CBC(1990)		N
Gaviidae	<i>Gavia stellata</i>	Red-throated loon	Yes BOVA,CBC(1988)		
Hirundinidae	<i>Hirundo rustica</i>	Barn swallow	Yes BBS(1999),BBA(1986),BOVA	JI, NOL	Y
Hirundinidae	<i>Progne subis</i>	Purple martin	Yes BBS(1999),BBA(1986),BOVA	JI	U
Hirundinidae	<i>Riparia riparia</i>	Bank swallow	No BOVA	JI	N
Hirundinidae	<i>Stelgidopteryx serripennis</i>	Northern rough-winged swallow	Yes BBS(1982),BBA(1986),BOVA	JI	Y
Hirundinidae	<i>Tachycineta bicolor</i>	Tree swallow	Yes BBS(1998),BBA(1986),BOVA,CBC(1980)		U
Icteridae	<i>Dolichonyx oryzivorus</i> - L	Bobolink	B -		N
Icteridae	<i>Euphagus carolinus</i>	Rusty blackbird	Yes CBC(1990)		N
Icteridae	<i>Euphagus cyanocephalus</i> - U	Brewer's blackbird			
Icteridae	<i>Icterus galbula</i>	Baltimore oriole	Yes BBA(1986),BOVA,CBC(1990)		N
Icteridae	<i>Icterus spurius</i>	Orchard oriole	Yes BBS(1999),BBA(1986),BOVA	JI	Y

Icteridae	<b><i>Molothrus ater</i></b>	Brown-headed cowbird	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI	Y
Icteridae	<b><i>Quiscalus major</i></b> - U	Boat-tailed grackle			
Icteridae	<b><i>Quiscalus mexicanus</i></b> - N	Great-tailed grackle			
Icteridae	<b><i>Quiscalus quiscula</i></b>	Common grackle	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, NOL	Y
Icteridae	<b><i>Sturnella magna</i></b>	Eastern meadowlark	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)		L
Laniidae	<b><i>Lanius ludovicianus</i></b>	Loggerhead shrike	ST B Yes BOVA,CBC(1982)		
Laridae	<b><i>Larus argentatus</i></b>	Herring gull	Yes BBS(1998),BBA(1986),BOVA,CBC(1990)	JI	N
Laridae	<b><i>Larus atricilla</i></b>	Laughing gull	Yes BBS(1999),BBA(1986),BOVA,CBC(1989)	JI	N
Laridae	<b><i>Larus delawarensis</i></b>	Ring-billed gull	Yes BOVA,CBC(1990)	JI	N
Laridae	<b><i>Larus fuscus</i></b>	Lesser black-backed gull	Yes CBC(1988)		
Laridae	<b><i>Larus marinus</i></b>	Great black-backed gull	Yes BBS(1998),BBA(1986),BOVA,CBC(1990)		N
Laridae	<b><i>Larus philadelphicus</i></b>	Bonaparte's gull	Yes CBC(1990)		N
Laridae	<b><i>Rissa tridactyla</i></b> - N	Black-legged kittiwake	No BOVA		
Laridae	<b><i>Rynchops niger</i></b> - L	Black skimmer	B, NB		N
Laridae	<b><i>Stercorarius parasiticus</i></b> - N	Parasitic jaeger	No BOVA		
Laridae	<b><i>Stercorarius pomarinus</i></b> - N	Pomarine jaeger	No BOVA		
Laridae	<b><i>Sterna antillarum</i></b>	Least tern	SS B Yes BBA(1986),BOVA		N
Laridae	<b><i>Sterna caspia</i></b>	Caspian tern	SS B, NB Yes BBA(1986),BOVA,CBC(1979)		N
Laridae	<b><i>Sterna forsteri</i></b>	Forster's tern	SS W Yes BOVA,CBC(1989)		N

Laridae	<b><i>Sterna hirundo</i></b>	Common tern	W Yes BBA(1986),BOVA	N
Laridae	<b><i>Sterna maxima</i></b>	Royal tern	B Yes BBS(1998),BBA(1986),BOVA	N
Mimidae	<b><i>Dumetella carolinensis</i></b>	Gray catbird	Yes BBS(1998),BBA(1984),BOVA,CBC(1990)	Y
Mimidae	<b><i>Mimus polyglottos</i></b>	Northern mockingbird	Yes BBS(1999),BBA(1988),BOVA,CBC(1990)	JI Y
Mimidae	<b><i>Toxostoma rufum</i></b>	Brown thrasher	Yes BBS(1998),BBA(1986),BOVA,CBC(1990)	JI, NOL Y
Motacillidae	<b><i>Anthus rubescens</i></b>	American pipit	Yes BOVA,CBC(1990)	N
Odontophoridae	<b><i>Colinus virginianus</i></b>	Northern bobwhite	Yes BBS(1999),BBA(1986),BOVA,CBC(1988)	JI Y
Paridae	<b><i>Baeolophus bicolor</i></b>	Tufted titmouse	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI Y
Paridae	<b><i>Poecile carolinensis</i></b>	Carolina chickadee	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, NOL Y
Parulidae	<b><i>Dendroica caerulea</i></b> - L	Black-throated blue warbler	-	N
Parulidae	<b><i>Dendroica castanea</i></b> - L	Bay-breasted warbler	-	N
Parulidae	<b><i>Dendroica cerulea</i></b> - L	Cerulean warbler	SS W No BOVA	N
Parulidae	<b><i>Dendroica coronata</i></b>	Yellow-rumped warbler	No BOVA	JI N
Parulidae	<b><i>Dendroica discolor</i></b>	Prairie warbler	Yes BBS(1999),BBA(1984),BOVA	Y
Parulidae	<b><i>Dendroica dominica</i></b>	Yellow-throated warbler	Yes BBS(1999),BBA(1984),BOVA	JI Y
Parulidae	<b><i>Dendroica fusca</i></b> - L	Blackburnian warbler	B -	N
Parulidae	<b><i>Dendroica magnolia</i></b> - L	Magnolia warbler	B -	N
Parulidae	<b><i>Dendroica palmarum</i></b>	Palm warbler	Yes BOVA,CBC(1990)	N

Parulidae	<i>Dendroica pensylvanica</i> - L	Chestnut-sided warbler		N
Parulidae	<i>Dendroica petechia</i>	Yellow warbler	Yes BBS(1998),BBA(1986),BOVA	JI, U NOL
Parulidae	<i>Dendroica pinus</i>	Pine warbler	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, Y NOL
Parulidae	<i>Dendroica striata</i>	Blackpoll warbler	No BOVA	JI N
Parulidae	<i>Dendroica tigrina</i> L	- Cape May warbler		N
Parulidae	<i>Dendroica virens</i>	Black-throated green warbler		JI N
Parulidae	<i>Geothlypis trichas</i>	Common yellowthroat	Yes BBS(1999),BBA(1986),BOVA,CBC(1989)	JI Y
Parulidae	<i>Helminthorus vermivorus</i> - L	Worm-eating warbler	-	U
Parulidae	<i>Icteria virens</i>	Yellow-breasted chat	Yes BBS(1999),BBA(1984),BOVA	Y
Parulidae	<i>Limnothlypis swainsonii</i> - U	Swainson's warbler	B -	N
Parulidae	<i>Mniotilla varia</i>	Black-and-white warbler	Yes BBS(1999),BBA(1988),BOVA	Y
Parulidae	<i>Oporornis agilis</i> - L	Connecticut warbler	No BOVA	N
Parulidae	<i>Oporornis formosus</i>	Kentucky warbler	Yes BBS(1999),BOVA	U
Parulidae	<i>Oporornis philadelphica</i> - L	Mourning warbler	B -	N
Parulidae	<i>Parula americana</i>	Northern parula	Yes BBS(1999),BBA(1984),BOVA	L
Parulidae	<i>Protonotaria citrea</i>	Prothonotary warbler	Yes BBS(1999),BBA(1984),BOVA	JI L
Parulidae	<i>Seiurus aurocapillus</i>	Ovenbird	Yes BBS(1999),BBA(1986),BOVA	NOL Y

Parulidae	<b><i>Seiurus motacilla</i></b>	Louisiana waterthrush	Yes BBS(1999),BBA(1984),BOVA	Y
Parulidae	<b><i>Seiurus noveboracensis</i></b> - L	Northern waterthrush	B -	N
Parulidae	<b><i>Setophaga ruticilla</i></b>	American redstart	Yes BBS(1992),BBA(1984),BOVA	U
Parulidae	<b><i>Vermivora celata</i></b>	Orange-crowned warbler	Yes CBC(1990)	
Parulidae	<b><i>Vermivora peregrina</i></b> - L	Tennessee warbler	-	N
Parulidae	<b><i>Vermivora pinus</i></b> - L	Blue-winged warbler		N
Parulidae	<b><i>Vermivora ruficapilla</i></b> - L	Nashville warbler	B -	N
Parulidae	<b><i>Wilsonia canadensis</i></b> - L	Canada warbler		N
Parulidae	<b><i>Wilsonia citrina</i></b>	Hooded warbler	Yes BBS(1999),BBA(1984),BOVA	Y
Parulidae	<b><i>Wilsonia pusilla</i></b> - L	Wilson's warbler	-	N
Passeridae	<b><i>Passer domesticus</i></b>	House sparrow	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	Y
Pelecanidae	<b><i>Pelecanus erythrorhynchos</i></b>	American white pelican	Yes CBC(1982)	
Phalacrocoracidae	<b><i>Phalacrocorax auritus</i></b>	Double-crested cormorant	B Yes BBS(1998),BBA(1986),BOVA,CBC(1990)	JI N
Phalacrocoracidae	<b><i>Phalacrocorax carbo</i></b>	Great cormorant	Yes CBC(1990)	
Phasianidae	<b><i>Bonasa umbellus</i></b> - N	Ruffed grouse		
Phasianidae	<b><i>Meleagris gallopavo silvestris</i></b>	Wild turkey	Yes BBS(1985),BOVA,CBC(1988)	Y
Phasianidae	<b><i>Phasianus colchicus</i></b>	Ring-necked pheasant	Yes BOVA,CBC(1987)	
Phoenicopteridae	<b><i>Phoenicopterus ruber</i></b>	Greater flamingo	Yes CBC(1988)	

Picidae	<b><i>Colaptes auratus</i></b>	Northern flicker	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI	Y
Picidae	<b><i>Dryocopus pileatus</i></b>	Pileated woodpecker	Yes BBS(1999),BBA(1984),BOVA,CBC(1990)	JI, NOL	Y
Picidae	<b><i>Melanerpes carolinus</i></b>	Red-bellied woodpecker	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, NOL	Y
Picidae	<b><i>Melanerpes erythrocephalus</i></b>	Red-headed woodpecker	Yes BBS(1999),BBA(1984),BOVA,CBC(1990)	JI	Y
Picidae	<i>Picoides borealis</i> - U	Red-cockaded woodpecker	FE B, No BOVA NB		
Picidae	<b><i>Picoides pubescens</i></b>	Downy woodpecker	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI	Y
Picidae	<b><i>Picoides villosus</i></b>	Hairy woodpecker	Yes BBS(1999),BOVA,CBC(1990)	JI	Y
Picidae	<b><i>Sphyrapicus varius</i></b>	Yellow-bellied sapsucker	B Yes BOVA,CBC(1990)		N
Podicipedidae	<b><i>Podiceps auritus</i></b>	Horned grebe	Yes CBC(1990)		N
Podicipedidae	<b><i>Podilymbus podiceps</i></b>	Pied-billed grebe	B Yes BBA(1984),BOVA,CBC(1990)		N
Rallidae	<b><i>Fulica americana</i></b>	American coot	B Yes BOVA,CBC(1990)		N
Rallidae	<i>Gallinula chloropus</i> - Common U moorhen		B, No BOVA NB		
Rallidae	<i>Laterallus jamaicensis</i> - U	Black rail	FS B, No BOVA NB		
Rallidae	<b><i>Porphyrrula martinica</i> - N</b>	Purple gallinule			
Rallidae	<b><i>Porzana carolina</i> - L</b>	Sora	B, No BOVA NB		N
Rallidae	<b><i>Rallus elegans</i> - L</b>	King rail	B No BOVA		U
Rallidae	<b><i>Rallus limicola</i></b>	Virginia rail	Yes BBS(1998),BOVA,CBC(1985)	NOL	N
Rallidae	<b><i>Rallus longirostris</i></b>	Clapper rail	Yes BBA(1986),BOVA,CBC(1990)		U
Regulidae	<b><i>Regulus calendula</i></b>	Ruby-crowned kinglet	Yes BOVA,CBC(1990)		N

Regulidae	<b><i>Regulus satrapa</i></b>	Golden-crowned kinglet	SS	B	Yes BOVA,CBC(1990)	N
Scolopacidae	<b><i>Actitis macularia</i></b>	Spotted sandpiper		B	Yes BBA(1986),BOVA,CBC(1979)	JI L
Scolopacidae	<b><i>Arenaria interpres</i></b> - Ruddy turnstone U					
Scolopacidae	<b><i>Bartramia longicauda</i></b> - U	Upland sandpiper		B	No BOVA	
Scolopacidae	<b><i>Calidris alba</i></b>	Sanderling			Yes CBC(1989)	
Scolopacidae	<b><i>Calidris alpina</i></b>	Dunlin			Yes CBC(1988)	N
Scolopacidae	<b><i>Calidris fuscicollis</i></b> - U	White-rumped sandpiper				
Scolopacidae	<b><i>Calidris himantopus</i></b> - U	Stilt sandpiper		No	BOVA	
Scolopacidae	<b><i>Calidris melanotos</i></b> - L	Pectoral sandpiper		-		N
Scolopacidae	<b><i>Calidris minutilla</i></b>	Least sandpiper			Yes BOVA,CBC(1987)	N
Scolopacidae	<b><i>Calidris pusilla</i></b> - L	Semipalmated sandpiper		-		N
Scolopacidae	<b><i>Gallinago gallinago</i></b>	Common snipe			Yes BOVA,CBC(1990)	N
Scolopacidae	<b><i>Limnodromus griseus</i></b>	Short-billed dowitcher			Yes BOVA,CBC(1985)	N
Scolopacidae	<b><i>Phalaropus tricolor</i></b> - N	Wilson's phalarope		No	BOVA	
Scolopacidae	<b><i>Scolopax minor</i></b>	American woodcock			Yes BOVA,CBC(1990)	L
Scolopacidae	<b><i>Tringa flavipes</i></b>	Lesser yellowlegs			Yes CBC(1988)	N
Scolopacidae	<b><i>Tringa melanoleuca</i></b>	Greater yellowlegs			Yes CBC(1990)	N
Scolopacidae	<b><i>Tringa solitaria</i></b> - L	Solitary sandpiper		-		N
Sittidae	<b><i>Sitta canadensis</i></b>	Red-breasted nuthatch	SS	B	Yes BOVA,CBC(1990)	N
Sittidae	<b><i>Sitta carolinensis</i></b>	White-breasted nuthatch			Yes BBS(1999),BBA(1984),BOVA,CBC(1990)	JI, Y NOL

Sittidae	<b><i>Sitta pusilla</i></b>	Brown-headed nuthatch	Yes BBA(1986),BOVA,CBC(1990)	Y
Strigidae	<b><i>Asio flammeus</i></b>	Short-eared owl	B Yes BOVA,CBC(1990)	
Strigidae	<b><i>Bubo virginianus</i></b>	Great horned owl	Yes BBS(1994),BBA(1988),BOVA,CBC(1990)	Y
Strigidae	<b><i>Otus asio</i></b>	Eastern screech-owl	Yes BBA(1984),BOVA,CBC(1989)	Y
Strigidae	<b><i>Strix varia</i></b>	Barred owl	Yes BBS(1992),BBA(1984),BOVA,CBC(1990)	Y
Sturnidae	<b><i>Sturnus vulgaris</i></b>	European starling	Yes BBS(1999),BBA(1984),BOVA,CBC(1990)	JI Y
Sulidae	<b><i>Morus bassanus</i></b> - U	Northern Gannet		
Sylviidae	<b><i>Polioptila caerulea</i></b>	Blue-gray gnatcatcher	Yes BBS(1999),BBA(1984),BOVA,CBC(1987)	JI, Y NOL
Thraupidae	<b><i>Piranga olivacea</i></b>	Scarlet tanager	Yes BBS(1999),BBA(1984),BOVA	Y
Thraupidae	<b><i>Piranga rubra</i></b>	Summer tanager	Yes BBS(1999),BBA(1986),BOVA	JI Y
Threskiornithidae	<b><i>Eudocimus albus</i></b> - N	White ibis	B No BOVA	
Threskiornithidae	<b><i>Plegadis falcinellus</i></b> - L	Glossy ibis	B, NB -	N
Trochilidae	<b><i>Archilochus colubris</i></b>	Ruby-throated hummingbird	Yes BBS(1999),BBA(1986),BOVA	JI L
Troglodytidae	<b><i>Cistothorus palustris</i></b>	Marsh wren	Yes BOVA,CBC(1990)	JI L
Troglodytidae	<b><i>Cistothorus platensis</i></b> - L	Sedge wren	B, NB No BOVA	N
Troglodytidae	<b><i>Thryothorus ludovicianus</i></b>	Carolina wren	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, Y NOL
Troglodytidae	<b><i>Troglodytes aedon</i></b>	House wren	Yes BBS(1992),BOVA,CBC(1989)	Y
Troglodytidae	<b><i>Troglodytes troglodytes</i></b>	Winter wren	SS B Yes BOVA,CBC(1988)	N

Turdidae	<b><i>Catharus fuscescens</i></b> - L	Veery	-		N
Turdidae	<b><i>Catharus guttatus</i></b>	Hermit thrush	SS B Yes BOVA,CBC(1988)		N
Turdidae	<b><i>Catharus minimus</i></b> - L	Gray-cheeked thrush	-		N
Turdidae	<b><i>Catharus ustulatus</i></b> - L	Swainson's thrush	-		N
Turdidae	<b><i>Hylocichla mustelina</i></b>	Wood thrush	Yes BBS(1999),BBA(1986),BOVA	JI	Y
Turdidae	<b><i>Sialia sialis</i></b>	Eastern bluebird	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)		Y
Turdidae	<b><i>Turdus migratorius</i></b>	American robin	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI, NOL	Y
Tyrannidae	<b><i>Contopus virens</i></b>	Eastern wood pewee	Yes BBS(1999),BBA(1986),BOVA	JI, NOL	Y
Tyrannidae	<b><i>Empidonax flaviventris</i></b> - U	Yellow-bellied flycatcher			
Tyrannidae	<b><i>Empidonax minimus</i></b> - U	Least flycatcher			
Tyrannidae	<b><i>Empidonax traillii</i></b>	Willow flycatcher	Yes BBS(1997)		
Tyrannidae	<b><i>Empidonax virescens</i></b>	Acadian flycatcher	Yes BBS(1999),BBA(1984),BOVA	JI, NOL	Y
Tyrannidae	<b><i>Myiarchus crinitus</i></b>	Great crested flycatcher	Yes BBS(1999),BBA(1986),BOVA	JI, NOL	Y
Tyrannidae	<b><i>Sayornis phoebe</i></b>	Eastern phoebe	Yes BBS(1999),BBA(1986),BOVA,CBC(1990)	JI	L
Tyrannidae	<b><i>Tyrannus tyrannus</i></b>	Eastern kingbird	Yes BBS(1998),BBA(1988),BOVA	JI	Y
Tytonidae	<b><i>Tyto alba</i></b>	Barn owl	SS W Yes BBA(1985),BOVA		U
Vireonidae	<b><i>Vireo flavifrons</i></b>	Yellow-throated vireo	Yes BBS(1999),BBA(1984),BOVA		Y
Vireonidae	<b><i>Vireo gilvus</i></b>	Warbling vireo	Yes BBS(1982)		
Vireonidae	<b><i>Vireo griseus</i></b>	White-eyed vireo	Yes BBS(1999),BBA(1986),BOVA	JI, NOL	Y

Vireonidae	<b><i>Vireo olivaceus</i></b>	Red-eyed vireo	Yes BBS(1999),BBA(1986),BOVA	JI, NOL	Y
Vireonidae	<b><i>Vireo solitarius</i></b>	Blue-headed vireo	Yes BBS(1985)		N

**Table 6. Mammals reported from the Jamestown Island 400 Project Area.**

**Scientific Name** - Bold face type indicates the species is reported by NPSpecies. If the presence of that species is corroborated by collections or observations from other listed sources, no further comment on its presence is indicated. If not supported by other databases, then the probability of its occurrence is indicated by N = No, U = Unlikely, and L = Likely. These are based on range maps (Linzey, 1998) and the expertise of DCR-DNH staff.

**Federal/State Status:** Reflects the legal status of the species at the federal and state level. FE = federal endangered, FT = federal threatened, FS = federal species of concern, SE = state endangered, ST = state threatened, SS = state species of concern. Note: 'Species of concern' is not a legal designation. Status ranks were taken from VFWIS.

**Tracked by DCR-DNH:** 'Y' indicates that a species is tracked as rare, threatened or endangered by DCR-DNH (Roble 2001). 'W' indicates that it is on the DCR-DNH watchlist. Neither of these designations indicates the presence or absence of the species in the JI400PA.

**VFWIS Confirmed:** Presence of species is confirmed within the search area (Figure 3) based on the database source. Refer to the methods section for a discussion of interpretation limitations.

**VFWIS Database Source:** BOVA = Biota of Virginia. Refer to the methods sections for a discussion of database sources.

**DCR-DNH Observations:** Based on field observations of DCR-DNH staff. JI = Jamestown Island and surrounding marshes, NOL = Neck O Land, adjacent uplands and marshes.

Family	Scientific Name	Common Name	Federal/State Status	Tracked by DCR-DNH	VFWIS confirmed	VFWIS Database Source	DCR-DNH Observations
Canidae	<b><i>Canis familiaris</i></b> - L	Domestic dog (feral)					
Canidae	<i>Canis latrans</i> - U	Coyote		No	BOVA		
Canidae	<b><i>Urocyon cinereoargenteus</i></b> - L	Eastern gray fox		No	BOVA		

Canidae	<i>Vulpes vulpes</i> - L	Red fox	No	BOVA	
Castoridae	<i>Castor canadensis</i>	Beaver	No	BOVA	JI
Cervidae	<i>Odocoileus virginianus</i>	White-tailed deer	No	BOVA	JI, NOL
Didelphidae	<i>Didelphis virginiana</i> - L	Virginia opossum	No	BOVA	
Felidae	<i>Felis silvestris</i> - L	Domestic cat			
Felidae	<i>Lynx rufus</i> <sup>1</sup> - U	Bobcat	No	BOVA	JI*
Leporidae	<i>Sylvilagus floridanus</i> - L	Eastern cottontail	No	BOVA	
Leporidae	<i>Sylvilagus palustris</i> - N	Marsh rabbit	SS	No	BOVA
Mephitidae	<i>Mephitis mephitis</i> - L	Striped skunk		No	BOVA
Muridae	<i>Microtus pennsylvanicus</i> - L	Meadow vole		No	BOVA
Muridae	<i>Microtus pinetorum</i> - L	Pine vole		No	BOVA
Muridae	<i>Mus musculus</i> - L	House mouse		No	BOVA
Muridae	<i>Ochrotomys nuttalli</i> - L	Lewis' golden mouse		No	BOVA
Muridae	<i>Ondatra zibethicus</i> - Y	Muskrat		No	BOVA
Muridae	<i>Oryzomys palustris</i> - L	Marsh rice rat		No	BOVA
Muridae	<i>Peromyscus gossypinus</i> - L	Cotton mouse		No	BOVA
Muridae	<i>Peromyscus leucopus</i> - L	Common white-footed mouse		No	BOVA
Muridae	<i>Rattus norvegicus</i> - L	Norway rat		No	BOVA
Muridae	<i>Reithrodontomys humulis</i> - L	Eastern harvest mouse		No	BOVA
Muridae	<i>Sigmodon hispidus</i> - U	Hispid cotton rat		No	BOVA
Muridae	<i>Zapus hudsonius</i> - L	Meadow jumping mouse		No	BOVA
Mustelidae	<i>Lontra canadensis</i> - L	River otter	SS	No	BOVA
Mustelidae	<i>Mustela frenata</i> - L	Long-tailed weasel		No	BOVA
Mustelidae	<i>Mustela vison</i> - L	Common mink		No	BOVA
Procyonidae	<i>Procyon lotor</i>	Raccoon		No	BOVA
Sciuridae	<i>Glaucomys volans</i> - L	Southern flying squirrel		No	BOVA
Sciuridae	<i>Marmota monax</i> - L	Woodchuck		No	BOVA
Sciuridae	<i>Sciurus carolinensis</i> - L	Gray squirrel		No	BOVA
Sciuridae	<i>Sciurus niger</i> - U	Southeastern fox squirrel		No	BOVA
Sciuridae	<i>Tamias striatus</i> - L	Eastern chipmunk		No	BOVA
Soricidae	<i>Blarina brevicauda</i> - L	Northern short-tailed shrew		No	BOVA
Soricidae	<i>Blarina carolinensis</i> - N	Southern short-tailed shrew			

Soricidae	<b><i>Cryptotis parva</i></b> - L	Least shrew	No	BOVA		
Soricidae	<b><i>Sorex hoyi</i></b> - L	Pygmy shrew	No	BOVA		
Soricidae	<b><i>Sorex longirostris</i></b> - L	Southeastern shrew	No	BOVA		
Talpidae	<b><i>Condylura cristata</i></b> - L	Small star-nosed mole	SS	No	BOVA	
Talpidae	<b><i>Scalopus aquaticus</i></b> - L	Eastern mole		No	BOVA	
Ursidae	<i>Ursus americanus</i> - N	Black bear		No	BOVA	
Vespertilionidae	<b><i>Eptesicus fuscus</i></b> - L	Big brown bat		No	BOVA	
Vespertilionidae	<i>Lasionycteris noctivagans</i> - L	Silver-haired bat		No	BOVA	
Vespertilionidae	<b><i>Lasiurus borealis</i></b> - L	Eastern red bat		No	BOVA	
Vespertilionidae	<i>Lasiurus cinereus</i> - L	Hoary bat		No	BOVA	
Vespertilionidae	<b><i>Myotis keenii</i></b> <sup>2</sup> - N	Keen's myotis				
Vespertilionidae	<b><i>Myotis lucifugus</i></b> - L	Little brown bat		No	BOVA	
Vespertilionidae	<i>Myotis septentrionalis</i> - L	Northern myotis		No	BOVA	
Vespertilionidae	<b><i>Nycticeius humeralis</i></b> - L	Evening bat		No	BOVA	
Vespertilionidae	<i>Pipistrellus subflavus</i> - L	Eastern pipistrelle		No	BOVA	
Vespertilionidae	<i>Plecotus (Corynorhinus) rafinesquii macrotis</i> - U	Eastern big-eared bat	FSSE	Y	No	BOVA

1 = Historic occurrence evident by paw print in archeological dig. It is unlikely to occur in the JI400PA under the current habitation and usage of the area.

2 = Virginia records for this species have been redesignated as *M. septentrionalis*

**Table 7. Selected families of Lepidoptera (butterflies, skippers, and moths) documented in the Jamestown Island 400 Project Area.**

**Federal/State Status:** Reflects the legal status of the species at the federal and state level. FE = federal endangered, FT = federal threatened, FS = federal species of concern, SE = state endangered, ST = state threatened, SS = state species of concern. Note: 'Species of concern' is not a legal designation. Status ranks taken from VFWIS.

**Tracked by DCR-DNH:** 'Y' indicates that a species is tracked as rare, threatened or endangered by DCR-DNH (Roble 2001). 'W' indicates that it is on the DCR-DNH watchlist. Neither of these designations indicates the presence or absence of the species in the JI400PA.

**VFWIS Confirmed:** Presence of species is confirmed within the search area (Figure 3) based on the database source. Refer to the methods section for a discussion of interpretation limitations.

**VFWIS Database Source:** BOVA = Biota of Virginia. Refer to the methods sections for a discussion of database sources.

**DCR-DNH Observations:** Based on field observations of DCR-DNH staff. JI = Jamestown Island and surrounding marshes, NOL = Neck O Land, adjacent uplands and marshes.

Family	Scientific Name	Common Name	Federal/State Status	Tracked by DCR-DNH	VFWIS Database Source	DCR-DNH Observations
<b>SKIPPERS:</b>						
Hesperiidae	<i>Amblyscirtes carolina</i>	Carolina road-skipper			No BOVA	
Hesperiidae	<i>Amblyscirtes reversa</i>	Reversed road-skipper		W	No BOVA	
Anatrytone						
Hesperiidae	<i>logan</i>	Delaware skipper			No BOVA	NOL
Hesperiidae	<i>Ancyloxypha numitor</i>	Least skipper			No BOVA	
Hesperiidae	<i>Calpodes ethlius</i>	Brazilian skipper			No BOVA	
Hesperiidae	<i>Epargyreus clarus</i>	Silver-spotted skipper			No BOVA	
Hesperiidae	<i>Erynnis baptisiae</i>	Wild indigo duskywing			No BOVA	
Hesperiidae	<i>Erynnis brizo</i>	Sleepy duskywing			No BOVA	
Hesperiidae	<i>Erynnis horatius</i>	Horace's duskywing			No BOVA	
Hesperiidae	<i>Erynnis juvenalis</i>	Juvenal's duskywing			No BOVA	
Hesperiidae	<i>Erynnis zarucco</i>	Zarucco duskywing			No BOVA	

Hesperiidae	<i>Euphyes dion</i>	Sedge skipper	JI, NOL
Hesperiidae	<i>Hylephila phyleus</i>	Fiery skipper	No BOVA
Hesperiidae	<i>Lerema accius</i>	Clouded skipper	No BOVA
Hesperiidae	<i>Panoquina ocola</i>	Long-winged skipper	No BOVA
Hesperiidae	<i>Panoquina panoquin</i>	Salt marsh skipper	No BOVA
Hesperiidae	<i>Poanes viator</i>	Broad-winged skipper	No BOVA
Hesperiidae	<i>Poanes zabulon</i>	Zabulon Skipper	NOL
Hesperiidae	<i>Prolema bulenta</i>	Rare skipper	Y NOL
Hesperiidae	<i>Staphylus hayhurstii</i>	Hayhurst's scallopwing	No BOVA
Hesperiidae	<i>Thorybes bathyllus</i>	Southern cloudywing	No BOVA
Hesperiidae	<i>Thorybes confusis</i>	Confused cloudywing	No BOVA
Hesperiidae	<i>Urbanus proteus</i>	Long-tailed skipper	No BOVA

BUTTERFLIES:

Lycaenidae	<i>Callophrys gryneus gryneus</i>	Olive hairstreak	No BOVA
Lycaenidae	<i>Celastrina ladon</i>	Spring azure	No BOVA
Lycaenidae	<i>Celastrina neglecta</i>	Summer azure	NOL
Lycaenidae	<i>Everes comyntas</i>	Eastern tailed-blue	No BOVA JI
Lycaenidae	<i>Satyrium calanus</i>	Banded hairstreak	No BOVA
Lycaenidae	<i>Strymon melinus</i>	Gray hairstreak	No BOVA NOL
Nymphalidae	<i>Asterocampa clyton</i>	Tawny emperor	No BOVA
Nymphalidae	<i>Cyllopsis gemma</i>	Gemmed satyr	NOL
Nymphalidae	<i>Danaus plexippus</i>	Monarch	No BOVA JI, NOL
Nymphalidae	<i>Enodia creola</i>	Creole pearly-eye	No BOVA
Nymphalidae	<i>Enodia portlandia</i>	Southern pearly-eye	No BOVA NOL
Nymphalidae	<i>Euptoieta claudia</i>	Variegated fritillary	No BOVA
Nymphalidae	<i>Hermeuptychia sosybius</i>	Carolina satyr	No BOVA JI
Nymphalidae	<i>Junonia coenia</i>	Common buckeye	No BOVA JI, NOL
Nymphalidae	<i>Libytheana carinenta</i>	American snout	No BOVA NOL
Nymphalidae	<i>Limenitis archippus</i>	Viceroy	No BOVA JI
Nymphalidae	<i>Limenitis arthemis astyanax</i>	Red-spotted purple	No BOVA NOL
Nymphalidae	<i>Megisto cymela</i>	Little wood satyr	JI, NOL
Nymphalidae	<i>Phycoides tharos</i>	Pearl crescent	JI
Nymphalidae	<i>Polygonia comma</i>	Eastern comma	No BOVA

Nymphalidae	<i>Polygonia interrogationis</i>	Question mark	No BOVA	
Nymphalidae	<i>Speyeria cybele</i>	Great spangled fritillary	No BOVA	
Nymphalidae	<i>Speyeria diana</i>	Diana fritillary	FS W	No BOVA
Nymphalidae	<i>Vanessa atalanta</i>	Red admiral		JI, NOL
Nymphalidae	<i>Vanessa virginiensis</i>	American lady	No BOVA	JI, NOL
Papilionidae	<i>Papilio glaucus</i>	Eastern tiger swallowtail	No BOVA	JI, NOL
Papilionidae	<i>Papilio palamedes</i>	Palamedes swallowtail		JI
Papilionidae	<i>Papilio polyxenes asterius</i>	Black swallowtail	No BOVA	
Papilionidae	<i>Papilio troilus</i>	Spicebush swallowtail	No BOVA	JI, NOL
Pieridae	<i>Colias eurytheme</i>	Orange sulphur	No BOVA	JI, NOL
Pieridae	<i>Phoebeis sennae</i>	Cloudless giant sulphur		NOL
Pieridae	<i>Pieris rapae</i>	European cabbage white	No BOVA	

MOTHS:

Arctiidae	<i>Cisseps fulvicollis</i>	Yellow-collared scape moth	JI
Arctiidae	<i>Cisthene plumbea</i>	Lead-colored lichen moth	JI, NOL
Arctiidae	<i>Clemensia albata</i>	Little white lichen moth	JI
Arctiidae	<i>Crambidia lithosioides</i>		JI
Arctiidae	<i>Crambidia uniformis</i>		NOL
Arctiidae	<i>Cycnia tenera</i>		JI
Arctiidae	<i>Euchaetes egle</i>		JI
Arctiidae	<i>Grammia anna</i>		JI
Arctiidae	<i>Holomelina aurantiaca</i>		NOL
Arctiidae	<i>Hyphantria cunea</i>		JI
Arctiidae	<i>Hypoprepia fucosa</i>		JI
Arctiidae	<i>Spilosoma congrua</i>		JI
Arctiidae	<i>Spilosoma virginica</i>		JI
Geometridae	<i>Anacamptodes defectaria</i>		JI
Geometridae	<i>Anacamptodes vellivolata</i>		JI
Geometridae	<i>Besma quercivoraria</i>	Oak besma	JI
Geometridae	<i>Dyspteris abortivaria</i>		JI
Geometridae	<i>Eubaphe mendica</i>	Little beggar	NOL
Geometridae	<i>Euchlaena amoenaria</i>		JI
Geometridae	<i>Euchlaena obtusaria</i>		JI

Geometridae	<i>Eupithecia miserulata</i>		JI
Geometridae	<i>Eusarca confusaria</i>		JI
Geometridae	<i>Eusarca fundaria</i>		JI
Geometridae	<i>Glena plumosaria</i>	Dotted gray	JI
Geometridae	<i>Horisme intestinata</i>		JI
Geometridae	<i>Hypagyrtis esther</i>	Esther moth	JI
Geometridae	<i>Hypagyrtis unipunctata</i>	One-spotted variant	JI, NOL
Geometridae	<i>Idaea demissaria</i>	Red-bordered wave	JI
Geometridae	<i>Lambdina athasaria</i> complex		JI
Geometridae	<i>Melanolophia canadaria</i>		JI
Geometridae	<i>Orthonama obstipata</i>	The gem	JI
Geometridae	<i>Probola alienaria</i>		JI
Geometridae	<i>Prochoerodes transversata</i>	Large maple spanworm moth	JI
Geometridae	<i>Protoboarmia porcelaria</i>		JI
Geometridae	<i>Semiothisa aemulataria</i>		JI
Geometridae	<i>Semiothisa bicolorata</i>		NOL
Geometridae	<i>Semiothisa multilineata</i>		JI, NOL
Geometridae	<i>Semiothisa promiscuata</i>		JI
Geometridae	<i>Xanthotype attenuaria</i>		NOL
Geometridae	<i>Xanthotype urticaria</i>		NOL
Lasiocampidae	<i>Artace cibraria</i>	Dot-lined white	JI
Lasiocampidae	<i>Tolype notialis</i>		JI
Lymantriidae	<i>Lymantria dispar</i>	Gypsy moth	No BOVA
Noctuidae	<i>Abablemma brimleyana</i>		NOL
Noctuidae	<i>Acronicta afflcta</i>		NOL
Noctuidae	<i>Acronicta vinnula</i>		JI
Noctuidae	<i>Allotria elonympha</i>	False underwing	JI
Noctuidae	<i>Basilodes pepita</i>		NOL
Noctuidae	<i>Bellura densa</i>		JI
Noctuidae	<i>Bleptina caradrinalis</i>		JI
Noctuidae	<i>Caenurgina erechtea</i>	Forage looper moth	JI
Noctuidae	<i>Catocala ultronia</i>	Ultronia underwing	JI
Noctuidae	<i>Doryodes spadaria</i>		JI
Noctuidae	<i>Elaphria comutinis</i>		JI

Noctuidae	<i>Galga partita</i>	The wedgling	JI
Noctuidae	<i>Heliothis zea</i>	Corn earworm	No BOVA
Noctuidae	<i>Homophoberia apicosa</i>		JI
Noctuidae	<i>Hypena manalis</i>		JI
Noctuidae	<i>Hypena scabra</i>		JI, NOL
Noctuidae	<i>Hypsoropha hormos</i>		JI
Noctuidae	<i>Idia americalis</i>		NOL
Noctuidae	<i>Idia diminuendis</i>		NOL
Noctuidae	<i>Idia rotundalis</i>		NOL
Noctuidae	<i>Lithacodia muscosula</i>		JI
Noctuidae	<i>Macrochilo orciferalis</i>		JI
Noctuidae	<i>Marathyssa inficita</i>		JI
Noctuidae	<i>Meganola minuscula</i>		JI
Noctuidae	<i>Metalectra discalis</i>		JI
Noctuidae	<i>Mocis texana</i>		JI, NOL
Noctuidae	<i>Nigetia formosalis</i>	Thin-winged owllet	NOL
Noctuidae	<i>Ostrinia nubilalis</i>	European corn borer	No BOVA
Noctuidae	<i>Paectes pygmaea</i>		JI
Noctuidae	<i>Palthis asopialis</i>	Faint-spotted palthis	NOL
Noctuidae	<i>Panopoda carneicosta</i>	Brown panopoda	JI
Noctuidae	<i>Panopoda rufimargo</i>	Red-lined panopoda	JI
Noctuidae	<i>Parallelia bistriaris</i>	Maple looper moth	JI, NOL
Noctuidae	<i>Phalaenostola larentioides</i>		JI
Noctuidae	<i>Phosphila miselioides</i>		JI
Noctuidae	<i>Pseudaletia unipuncta</i>	Armyworm moth	No BOVA
Noctuidae	<i>Scolecampa liburna</i>	Deadwood borer moth	NOL
Noctuidae	<i>Tetanolita mynesalis</i>		JI, NOL
Noctuidae	<i>Thioptera nigrofimbria</i>	Black-bored lemon moth	JI, NOL
Noctuidae	<i>Ulolonche culea</i>		JI
Noctuidae	<i>Zale lunata</i>		JI
Notodontidae	<i>Datana angusii</i>		JI
Notodontidae	<i>Datana contracta</i>		JI
Notodontidae	<i>Datana drexelii</i>		JI
Notodontidae	<i>Heterocampa biundata</i>		JI

Notodontidae	<i>Heterocampa obliqua</i>		JI
Notodontidae	<i>Heterocampa subrotata</i>		JI
Notodontidae	<i>Heterocampa umbrata</i>		JI
Notodontidae	<i>Macrurocampa marthesia</i>		JI
Saturniidae	<i>Anisota virginiensis</i>	Pink-striped oakworm moth	No BOVA
Saturniidae	<i>Callosamia securifera</i>	Sweetbay silk moth	No BOVA
Saturniidae	<i>Citheronia sepulcralis</i>		JI
Sphingidae	<i>Ceratomia catalpae</i>	Catalpa sphinx moth	No BOVA
Sphingidae	<i>Paonias excaecatus</i>		JI, NOL
Sphingidae	<i>Paonias myops</i>	Small-eyed sphinx	JI

Group	Family	Scientific Name	Common Name	Federal/State Status		VDCRDNH Database Source	VDCRDNH Observations
				Tracked by	VDGIF confirmed		
<b>Bivalves</b>		<i>Elliptio complanata</i>	Mussel, eastern elliptio	VDCRDNH	No BOVA	DGIF Database Source	
		<i>Pyganodon grandis</i>	Mussel, giant floater				
<b>Crustaceans</b>		<i>Cambarus robustus</i>	Crayfish, no common name	FS	Y	No BOVA	
		<i>Cambarus diogenes diogenes</i>	Crayfish, devil				
		<i>Orconectes immunis</i>	Crayfish				
		<i>Orconectes limosus</i>	Crayfish, spiny cheek				
		<i>Fallicambarus uhleri</i>	Crayfish				
		<i>Cambarus bartonii bartonii</i>	Crayfish, Appalachian brook				
		<i>Orconectes virginianus</i>	Crayfish, Chowanoke				
<b>Arachnid</b>		<i>Amblyomma americanum</i>	Tick, lone star			No BOVA	
		<i>Dermacentor albipictus</i>	Tick, winter			No BOVA	

<i>Dermacentor variabilis</i>	Tick, American dog	No BOVA
<i>Haemaphysalis leporispalustris</i>	Tick, rabbit	No BOVA
<i>Rhipicephalus sanguineus</i>	Tick, brown dog	No BOVA

Coleoptera	<i>Cicindela repanda</i>	A tiger beetle	JI, NOL
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**DCR-DNH Observations:** Based on field observations of DCR-DNH staff. JI = Jamestown Island and surrounding marshes, NOL = Neck O Land, adjacent uplands and marshes.

**Davis, 1938:** Odonata reported by Davis (1938). Carle (1982) assigns *Gomphus villosipes* and *Libellula auripennis*, originally identified by Davis, to *Arigomphus villosipes* and *L. needhami* respectively, based on new taxonomies.

Family	Scientific Name	Common Name	Federal/State Status	Tracked by DCR-DNH	DCR-DNH Observations	Davis, 1938
<b>DRAGONFLIES:</b>						
Aeshnidae	<i>Anax junius</i>	Common green darner			NOL	
Aeshnidae	<i>Epiæschna heros</i>	Swamp darner			JI, NOL	
Gomphidae	<i>Arigomphus villosipes</i>	Unicorn Clubtail	W			JI
Libellulidae	<i>Brachymesia gravida</i>	Four-spotted pennant	W		JI	
Libellulidae	<i>Celithemis eponina</i>	Halloween Pennant			NOL	
Libellulidae	<i>Erythemis simplicicollis</i>	Eastern pondhawk		JI, NOL	JI	
Libellulidae	<i>Libellula incesta</i>	Slaty skimmer			NOL	
Libellulidae	<i>Libellula needhami</i>	Needham's skimmer		JI, NOL	JI	
Libellulidae	<i>Libellula cyanea</i>	Spangled skimmer				JI
Libellulidae	<i>Libellula vibrans</i>	Great blue skimmer		JI	JI	
Libellulidae	<i>Libellula lydia</i>	Common whitetail		JI, NOL		
Libellulidae	<i>Pachydiplax longipennis</i>	Blue dasher		NOL	JI	
Libellulidae	<i>Perithemis tenera</i>	Eastern amberwing			JI	

Libellulidae	<i>Tramea lacerata</i>	Black saddlebags	JI, NOL
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**DAMSELFLIES:**

Coenagrionidae	<i>Enallagma civile</i>	Familiar Bluet	NOL
Coenagrionidae	<i>Ischnura posita</i>	Fragile forktail	JI
Coenagrionidae	<i>Ischnura ramburii</i>	Rambur's forktail	JI

**Tracked Species**

Acipenseridae	<i>Acipenser oxyrinchus</i>	Atlantic sturgeon	SS	Y	Yes COLLECTIONS(1997),BOVA	A	
Catostomidae	<i>Erimyzon suetta</i>	Lake chubsucker	Y	No	BOVA		
Centrarchidae	<i>Enneacanthus chaetodon</i>	Blackbanded sunfish - N	SS	Y	No BOVA		
Cyprinidae	<i>Notropis bifrenatus</i>	Bridle shiner	SS	Y	Yes COLLECTIONS(1970),BOVA	A	
Bufonidae	<i>Bufo quercicus</i> - U	Oak toad	SS	Y	No BOVA		
Hylidae	<i>Hyla gratiosa</i> - L	Barking treefrog	ST	Y	No BOVA		
Ambystomatidae	<i>Ambystoma mabeei</i> - L	Mabee's salamander	ST	Y	No BOVA		
Colubridae	<i>Regina rigida</i> rigida - U	Glossy crayfish snake	Y	No	BOVA		
Accipitridae	<i>Accipiter cooperii</i>	Cooper's hawk	B	Yes	BBS(1994),BBA(1984),BOVA,CBC(1990)	U	
Accipitridae	<i>Circus cyaneus</i>	Northern harrier	SS	B	Yes BBA(1986),BOVA,CBC(1990)	N	
Accipitridae	<i>Haliaeetus leucocephalus</i>	Bald eagle <i>leucocephalus</i>	FT	B	Yes BBS(1999),BBA(1986),COLLECTIONS(2001),BOVA,CBC(1989)	JI	Y
Anatidae	<i>Anas strepera</i>	Gadwall	B	Yes	BOVA,CBC(1990)	N	
Anatidae	<i>Mergus merganser americanus</i>	Common merganser	B	Yes	BOVA,CBC(1990)	N	

Ardeidae	<i>Ardea alba egretta</i>	Great egret	SS	B	Yes BBS(1998),BBA(1988),BOVA,CBC(1990)	L
Ardeidae	<i>Egretta caerulea caerulea</i> - L	Little blue heron		B	No BOVA	N
Ardeidae	<i>Egretta thula</i>	Snowy egret		B	Yes BBA(1986),BOVA	N
Ardeidae	<i>Egretta tricolor</i> - N	Tricolored heron		B	No BOVA	
Ardeidae	<i>Nyctanassa violacea</i> - N	Yellow-crowned night-heron		B	No BOVA	
Ardeidae	<i>Nycticorax nycticorax hoactii</i>	Black-crowned night-heron		B	Yes BBA(1984),BOVA,CBC(1989)	N
Certhiidae	<i>Certhia americana</i>	Brown creeper		B	Yes BOVA,CBC(1990)	N
Emberizidae	<i>Melospiza georgiana</i>	Swamp sparrow		B	Yes BOVA,CBC(1990)	N
Falconidae	<i>Falco peregrinus</i>	Peregrine falcon	ST	B	Yes BOVA,CBC(1984)	N
Fringillidae	<i>Carpodacus purpureus</i>	Purple finch	SS	B	Yes BOVA,CBC(1990)	N
Fringillidae	<i>Loxia curvirostra</i> - L	Red crossbill		B	-	N
Icteridae	<i>Dolichonyx oryzivorus</i> - L	Bobolink		B	-	N
Laniidae	<i>Lanius ludovicianus</i> ludovicianus	Loggerhead shrike	ST	B	Yes BOVA,CBC(1982)	
Laridae	<i>Sterna antillarum</i>	Least tern	SS	B	Yes BBA(1986),BOVA	N
Laridae	<i>Sterna maxima maximus</i>	Royal tern		B	Yes BBS(1998),BBA(1986),BOVA	N
Parulidae	<i>Dendroica fusca</i> - L	Blackburnian warbler		B	-	N
Parulidae	<i>Dendroica magnolia</i> - L	Magnolia warbler		B	-	N
Parulidae	<i>Limnothypis swainsonii</i> - L	Swainson's warbler		B	-	N
Parulidae	<i>Oporornis philadelphia</i> - L	Mourning warbler		B	-	N
Parulidae	<i>Seiurus noveboracensis</i> - L	Northern waterthrush		B	-	N
Parulidae	<i>Vermivora ruficapilla</i> - L	Nashville warbler		B	-	N
Phalacrocoracidae	<i>Phalacrocorax auritus</i>	Double-crested cormorant		B	Yes BBS(1998),BBA(1986),BOVA,CBC(1990)	JI N

Picidae	<i>Sphyrapicus varius</i>	Yellow-bellied sapsucker	B	Yes BOVA,CBC(1990)	N
Podicipedidae	<i>Podilymbus podiceps</i>	Pied-billed grebe	B	Yes BBA(1984),BOVA,CBC(1990)	N
Rallidae	<i>Fulica americana</i>	American coot	B	Yes BOVA,CBC(1990)	N
Rallidae	<i>Rallus elegans</i> - L	King rail	B	No BOVA	U
Rallidae	<i>Rallus limicola</i>	Virginia rail	B	Yes BBS(1998),BOVA,CBC(1985)	N
Regulidae	<i>Regulus satrapa</i>	Golden-crowned kinglet	SS	B Yes BOVA,CBC(1990)	N
Scolopacidae	<i>Actitis macularia</i>	Spotted sandpiper	B	Yes BBA(1986),BOVA,CBC(1979)	JI L
Scolopacidae	<i>Bartramia longicauda</i> - N	Upland sandpiper	B	No BOVA	
Sittidae	<i>Sitta canadensis</i>	Red-breasted nuthatch	SS	B Yes BOVA,CBC(1990)	N
Strigidae	<i>Asio flammeus</i>	Short-eared owl	B	Yes BOVA,CBC(1990)	
Threskiornithidae	<i>Eudocimus albus</i> - N	White ibis	B	No BOVA	
Troglodytidae	<i>Troglodytes troglodytes</i>	Winter wren	SS	B Yes BOVA,CBC(1988)	N
Turidae	<i>Catharus guttatus</i>	Hermit thrush	SS	B Yes BOVA,CBC(1988)	N
Anatidae	<i>Anas discors</i>	Blue-winged teal	B, NB	-	N
Ardeidae	<i>Botaurus lentiginosus</i> - L	American bittern	B, NB	No BOVA	U
Laridae	<i>Rynchops niger</i> - L	Black skimmer	B, NB	-	N
Laridae	<i>Sterna caspia</i>	Caspian tern	SS	B, NB Yes BBA(1986),BOVA,CBC(1979)	N
Picidae	<i>Picoides borealis borealis</i> - U	Red-cockaded woodpecker	FE	B, NB No BOVA	
Rallidae	<i>Gallinula chloropus cachinnans</i> - U	Common moorhen	B, NB	No BOVA	

Rallidae	<i>Laterallus jamaicensis</i> - U	Black rail	FS	B, NB	No BOVA		
Rallidae	<i>Porzana carolina</i> - L	Sora		B, NB	No BOVA		N
Threskiornithidae	<i>Plegadis falcinellus</i> - L	Glossy ibis		B, NB	-		N
Troglodytidae	<i>Cistothorus platensis</i> - L	Sedge wren		B, NB	No BOVA		N
Ardeidae	<i>Ardea herodias herodias</i>	Great blue heron	W	Yes	BBS(1999),BBA(1989),COLLECTIONS,CWB(1993),BOVA	JI	Y
Ardeidae	<i>Ixobrychus exilis exilis</i>	Least bittern	W	Yes	BBA(1986),BOVA	JI	L
Cardinalidae	<i>Spiza americana</i> - U	Dickcissel	W	No	BOVA		
Laridae	<i>Sterna forsteri</i>	Forster's tern	SS	W	Yes BOVA,CBC(1989)		N
Laridae	<i>Sterna hirundo</i>	Common tern	W	Yes	BBA(1986),BOVA		N
Parulidae	<i>Dendroica cerulea</i> - L	Cerulean warbler	SS	W	No BOVA		N
Tytonidae	<i>Tyto alba pratincola</i>	Barn owl	SS	W	Yes BBA(1985),BOVA		U
Petromyzontidae	<i>Lampetra aepyptera</i>	Least brook lamprey	W	Yes	COLLECTIONS(1958)		N
Hylidae	<i>Pseudacris ocularis</i> - N	Little grass frog	W	No	BOVA		
Ranidae	<i>Rana virgatipes</i> - U	Carpenter Frog	SS	W			
Plethodontidae	<i>Stereochilus marginatus</i> - U	Many-lined salamander	W	No	BOVA		
Colubridae	<i>Farancia erytrogramma erytrogramma</i>	Rainbow snake	W	Yes	COLLECTIONS,BOVA		Y
Emydidae	<i>Malaclemys terrapin terrapin</i> - L	Northern diamond-backed terrapin	W	No	BOVA		
Ardeidae	<i>Ardea herodias herodias</i>	Great blue heron	W	Yes	BBS(1999),BBA(1989),COLLECTIONS,CWB(1993),BOVA	JI	Y
Ardeidae	<i>Ixobrychus exilis exilis</i>	Least bittern	W	Yes	BBA(1986),BOVA	JI	L
Cardinalidae	<i>Spiza americana</i> - U	Dickcissel	W	No	BOVA		

Laridae	<i>Sterna forsteri</i>	Forster's tern	SS	W	Yes BOVA,CBC(1989)	N
Laridae	<i>Sterna hirundo</i>	Common tern		W	Yes BBA(1986),BOVA	N
Parulidae	<i>Dendroica cerulea</i> - L	Cerulean warbler	SS	W	No BOVA	N
Tytonidae	<i>Tyto alba pratincola</i>	Barn owl	SS	W	Yes BBA(1985),BOVA	U
Vespertilionidae	<i>Plecotus (Corynorhinus) rafinesquii macrotis</i> - U	Eastern big-eared bat	FSSE	Y	No BOVA	
Hesperiidae	<i>Problema bulenta</i>	Rare skipper		Y		NOL

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Figure 1. Jamestown Island 400 Project Area

## Jamestown Island 400 Project Study Area



